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# Results from first survey and roundtable consultations

D5.2

AW-Drones

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# AW-Drones

## CONTRIBUTING TO A WELL-REASONED SET OF AIRWORTHINESS STANDARDS FOR MASS-MARKET DRONES

### Abstract

This document reports on the outcomes of the first survey and roundtable consultations performed between M1 and M15 in the AW-Drones project..

The document is organized as two distinct parts: the first part is devoted to the presentation of the results of the roundtable consultations with the Advisory Board of the AW-Drones project, while the second part contains the outcomes of the first online survey with stakeholders.



# 1 Results from first roundtable consultations

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AW-Drones project is built upon a solid and structured communication with stakeholders external to the consortium. As extensively described in Deliverable 7.1, the project identified three main categories of stakeholders, with different levels of involvement and means of consultation:

1. Institutional bodies:
  - a. EU and EC: DG-INEA, DG-MOVE (EASA and the European Commission represent the main targets of the project, to be updated constantly on progress, findings and results);
  - b. European Joint Undertakings (e.g. SESAR, Clean-Sky);
  - c. Regulatory and safety agencies: ICAO, EASA and National CAAs, JARUS;
  - d. Standard making bodies: EUSCG, ISO, EUROCAE, ASTM, RTCA, ASD-STAN;
  - e. National bodies: National Ministries of Transport, National Agencies.
2. Specialised audience:
  - a. AW-Drones Advisory Board
  - b. Research community
    - i. R&I institutes;
    - ii. Universities;
    - iii. Private research companies;
  - c. Industry
    - i. Drones manufacturers and maintainers;
    - ii. Drones operators;
    - iii. Drones Pilots
    - iv. ANSPs;
    - v. UTM/U-Space Service Providers
    - vi. Industrial associations;
  - d. Training Institutes.
3. General stakeholders:
  - a. General public;
  - b. Media.

## 1.1 Advisory Board involvement

Active contribution and participation from a large set of stakeholders are key aspects for the achievement of the objectives of the coordination action. Thus, the project constituted an Advisory Board. This group is composed by experts in the field of drone operations, regulation, airworthiness and standard development. The role of the advisory board consists in: supporting the methodological work of the project, providing review, recommendations and feedback on project activities and findings; to bring an external view into the project and help the consortium answering the following questions:





- “What are the main gaps and bottlenecks in the current development of standards for drones?”
- “What is the safety effectiveness of the standards currently available and under development?”

The Advisory Board is also be a channel for the consortium to access information about activities going on worldwide in terms of safety regulation and standards development for drones. The group is exclusively composed of external organisations and will act as an independent advisory body. Its members participate on behalf of their respective organisations. Membership does not imply endorsement of the activities or results of the project by the organisations represented. The Consortium provides the AB with the administrative and logistical support necessary for its operation and compensate members for the costs of their participation. The AB can interact with the project also via mail and phone calls.

As already described in the previous sections, during year 2019 selected members of the project Advisory Board have been invited to contribute to the project workshops and have been individually contacted by the consortium for feedbacks on specific technical topics. The current composition of the Advisory Board is reported here below:

Name	Affiliation	Role	Stakeholder category	Country
Hao Liu	BUAA	JARUS Vice Chair	Safety regulator	China
Giovanni Di Antonio	ENAC	Airworthiness Regulation Department Structures Expert	Safety Regulator	Italy
Carl King	Northrop Grumman	Chair WG 2 (Product) in ISO TC/20 SC/16	Manufacturer/ Standard Making Body Member	International
Catherine Ronfle-Nadaud	DGAC		Safety Regulator/ANSP	France
Alessandro Gonçalves Adinolfi	ANAC		Safety Regulator	International
Kakuya Iwata	Japan UAS Industrial Development Association	Executive Director	Manufacturers association	International
Joe Urli	Australian Certified UAV Operators		Operators Association	International
Louise Jupp	Terreco Aviation	Director	Operator	International
Robert Jonker	Clear Flight Solutions		Manufacturer/Operator	EU



Kenzo Nonami	Japan Drone Consortium (JDC)	Chairman	Operators Association	Japan
Franck Martin	ADP Inginerie	Aiport Operations development	Operator for innovative applications	France
Stephane Morelli	Azur Drones	General director	Manufacturer/Operator	France
Anne-Marie Haute	Pilgrim Technology	Maunfacturer/ JARUS advisor for DGAC	Manufacturer Operator	EU
David Roy Guerin	Ozyrpas	Regulatory consultant	Regulatory consultant	UK
Sean Reitz	United drone Holdings	CEO	Manufacturer	International
Natale Di Rubbo	EASA	Rule making officer UAS	Strategy and Safety Manager Director	EU
Mike Lissone	EUROCONTROL	UAS-ATM Integration Manager		EU
David Bowen	SESAR JU	UAS-ATM Integration Manager		EU
Félix Herrero	AESA		Safety Regulator	Spain
Karim Benmeziane		ASD-STAN WG8 Secretary	Standard Making Body	France
Andrew Thurling	NUAIR Alliance	Chief Technology Officer	Standard Making Body	US
Lorenzo Murzilli	FOCA	JARUS WG-6 Leader	Safety Regulator	Switzerland
Josef Saurer		DIN responsible on UAS	Standard Making Body	Germany
Alain Vallée	EUROCAE		Standard Making Body	EU





Segiu Marzac	EUROCAE		Standard Making Body	EU
Ségalite Sellem-Delmar	Safran Electronics & Defense	Airworthiness Manager	Manufacturer	EU
Philip Kenul	ASTM	Chair of ASTM Committee F38 on Unmanned Aircraft Systems	Standard Making Body	US

## 1.2 Roundtable consultations

In June 2019 the AW-Drones consortium and selected Advisory Board Members had a meeting and a collaborative workshop with EASA in Cologne premises. The main objective of the workshop was the review of the approach to data collection (WP 2) and its preliminary results (WP3) with the Advisory Board and EASA experts. EASA personnel involved in the workshop were coming from different departments and working on the following topics:

- C3 datalink and communication, Navigation
- DAA
- Cyber Security
- Organizations
- Crew competences
- Design & Airworthiness: HMI, safety assessment, structure, ECS)

Here below the agenda of the two days' workshop is reported:

Thursday 6 <sup>th</sup> June			
14.00	1	Welcome & Introduction	EASA/DBL
14.05	2	Overview of the AW-DRONES project	DBL
14.20	3	Overview of standards collection and classification framework	DLR
14.30	4	Overview of proposed assessment methodology	NLR
14.50	5	Introduction to group works: topics and objectives	DBL



<b>15.00</b>	<b>Coffee Break</b>		
<b>15.15</b>	<b>6</b>	Group Sessions: <ul style="list-style-type: none"> <li>• Group 1/A: Avionics (C3 datalink and communication, DAA)</li> <li>• Group 2: Design &amp; Airworthiness (HMI, safety assessment)</li> <li>• Group 3/A: Organizations</li> </ul>	<b>ALL</b>
<b>17.30</b>	<b>End of 1<sup>st</sup> day</b>		

<b>Friday 7<sup>th</sup> June</b>			
<b>09.30</b>	<b>1</b>	Group Sessions: <ul style="list-style-type: none"> <li>• <b>Group 1/B: Avionics (Cyber security, software)</b></li> <li>• <b>Group 2: Design &amp; Airworthiness (structure, ECS)</b></li> <li>• <b>Group 3/B: FCL</b></li> </ul>	<b>ALL</b>
<b>11.00</b>	<b>Coffee Break</b>		
<b>11.15</b>	<b>2</b>	Group Sessions cont'd	<b>ALL</b>
<b>12.30</b>	<b>3</b>	Closure and Wrap-up	<b>DBL</b>
<b>13.00</b>	<b>End of 2<sup>nd</sup> day</b>		

The main outcome of the workshop have been integrated in AW-Drones deliverable D3.1. In particular the following feedback has been collected from EASA experts and Advisory Board members:

1. Data categorization:

- Comments received from the groups were integrated. The new categorization based on fixed domains and keywords is available in D3.1.
- In the online repository it will be possible to associate more than one keyword to each standard (using a tagging process). Each keyword can be associated to standards already classified in one or more domains (see Section 8).

2. Standards collected:

- All groups provided comments about the standards collected. New standards were added to the table and others removed or classified differently. The detailed feedback is included in D3.1





The minutes of the first EASA workshop with the Advisory Board members can be found at the following link: <https://seafiler.dbblue.it/f/fb6a35daacaf4acab436/?dl=1>

Another collaborative workshop in EASA was organised in January 2020, with the objective to consolidate and validate the outcomes of Work Package 4. Some of the considerations emerged in this meeting were included in D4.1.

The minutes of the second EASA workshop with the Advisory Board members can be found at the following link: <https://seafiler.dbblue.it/f/3cf986a03d694fe3af44/?dl=1>





**SURVEY ON  
EUROPEAN  
UAS OPERATIONS  
&  
OPERATION RISK ASSESSMENT  
METHODS**



Funded By The European Union



	Page
<b>Index</b>	1-2
<b>Introduction &amp; Objective</b>	3
<b>Terms &amp; Explanations:</b>	
- Operators & Operations	4
- Drone Market Sectors	5
- Flight Mission Purposes	7
<b>Survey Methodology</b>	9
<b>RESULTS</b>	10
<b>Survey Respondents</b>	
- Nominal Listing	11
- Basic Numbers	13
<b>UAS OPS Section 1 - Current Situation</b>	
● <b>Market Sectors</b>	
- Flight Envelopes – VLOS, EVLOS, BVLOS	14
- Flight Zones – Sparsely/Densely Populated	16
● <b>Flight Missions</b>	
- Flight Envelopes – VLOS, EVLOS, BVLOS	18
- Flight Zones – Sparsely/Densely Populated	20
<b>Section 2 - Near-Future (1-2 years)</b>	
● <b>Market Sectors</b>	
- Flight Envelopes – VLOS, EVLOS, BVLOS	22
- Flight Zones – Sparsely/Densely Populated	24
● <b>Flight Missions</b>	
- Flight Envelopes – VLOS, EVLOS, BVLOS	26
- Flight Zones – Sparsely/Densely Populated	28
<b>Section 3 – Comparisons Between Current &amp; Near-Future</b>	
- Market Sectors – Flight Envelopes	30
- Market Sectors – Flight Zones	31
- Flight Missions – Flight Envelopes	32
- Flight Missions – Flight Zones	33
<b>Section 4 - SORA Access &amp; Use</b>	34
<b>OPS RISK SORA, Standard Scenarios, Predefined Risk Assessment</b>	
Respondents	35
Questions & Responses	36
<b>ANNEX - PART 1 – UAS OPS SURVEY</b>	
<b>Section 1 UAS OPS Survey – Current Operations</b>	<b>39</b>
<i>(4 Flight Mission Purpose Selections – Each with 3 graphs)</i>	
1 Aerial Photography, Audio-Visual Production, Advertising	40
2 Agriculture, Fishery, Fish Farming, Forestry	44
3 Aircraft System or Sub-System Production	48
4 Cinema & TV Industry	52
5 Construction & Real Estate	56
6 Entertainment, Artistic Expression & Sport	60
7 Environmental Protection & Wildlife Conservation	64
8 Flight Training / Instruction	68
9 Heritage Site & Historical Monument Management	73
10 Humanitarian Aid	77
11 Insurance (Accident & Claim Investigation)	81

	Page
12 Maintenance	84
13 Mining & Exploration	88
14 Miscellaneous - Air Show	92
15 Miscellaneous - Demonstration	94
16 Miscellaneous - Ferry/Positioning	98
17 News Gathering & Broadcasting	99
18 Policy Compliance & Obtaining Legal Proof (no responses)	
19 Public Services & Safety	101
20 Security & Law Enforcement	105
21 Remote Operations - Non-Sensing	109
22 Remote Operations – Sensing	111
23 Testing, Research & Science & Testing	115
24 Transport	122
25 Utility Companies (Public & Private)	126
<b>Section 2 UAS OPS Survey - Future Operations</b>	<b>130</b>
<i>(4 Flight Mission Purpose Selections – Each with 3 graphs)</i>	
1 Aerial Photography, Audio-Visual Production, Advertising	131
2 Agriculture, Fishery, Fish Farming, Forestry	135
3 Aircraft System or Sub-System Production	139
4 Cinema & TV Industry	143
5 Construction & Real Estate	147
6 Entertainment, Artistic Expression & Sport	151
7 Environmental Protection & Wildlife Conservation	153
8 Flight Training / Instruction	156
9 Heritage Site & Historical Monument Management	163
10 Humanitarian Aid	167
11 Insurance (Accident & Claim Investigation)	171
12 Maintenance	175
13 Mining & Exploration	179
14 Miscellaneous - Air Show	183
15 Miscellaneous – Demonstration	184
16 Miscellaneous - Ferry/Positioning (no responses)	
17 News Gathering & Broadcasting	187
18 Policy Compliance & Obtaining Legal Proof	189
19 Public Services & Safety	191
20 Security & Law Enforcement	195
21 Remote Operations - Non-Sensing	199
22 Remote Operations – Sensing	201
23 Testing, Research & Science	205
24 Transport	213
25 Utility Companies (Public & Private)	217
<b>Section 3 Risk Analysis Methods – SORA Access &amp; Use</b>	<b>221</b>
<b>Answers to 18 questions illustrated by bar graphs</b>	<b>222</b>
<b>Annex - PART 2 – OPS RISK SURVEY</b>	
<b>Perception of SORA, Standard Scenarios, Predefined Risk Assessment</b>	<b>227</b>
<b>Answers to 31 questions illustrated by bar graphs</b>	<b>228</b>

**Note:** Due to insufficient replies, certain entries in Sections 1 & 2 of the Annex do not contain the full set of graphs.

The non-military Unmanned Aircraft Systems (UAS), as well as the regulatory authorities and the press, make suppositions concerning the drone market (the market sectors involved), as well as the flight operations actually taking place in these market sectors.

These suppositions are not based on inputs received from qualified and quantified UAS operator community members. In addition, there are no commonly accepted definitions of the terms used to identify the market sectors and flight operations, which adds to the confusion.

As a consequence, the information on the current & future drone markets that is getting out to industry (manufacturers & operators), potential customers & investors, policy makers, regulatory authorities, standards producing organisations, as well as the general public, is not necessarily correct. This survey endeavors to contribute to correcting this situation.

The UAS OPS survey is based on an operation-centric approach (instead of drone centric). Consequently, it does not make a distinction between UAS based on their size, mass, airframe configuration, or type of propulsion. In order to make it available to the largest amount of European UAS Operators, the UAS OPS and the OPS RISK surveys were made available in 4 languages: English, German, French & Spanish.

This survey was carried out in the context of the AW-Drones Project ([www.aw-drones.eu](http://www.aw-drones.eu)), which is funded by the European Union (EU).

## Survey Objective

UAS OPS Survey	Current Situation	Identify the <b>market sectors</b> in which drone flight operations [VLOS, EVLOS, BVLOS - below 500 ft. (150 m) above ground level - above densely or sparsely populated areas] are currently taking place in compliance with the <b>currently applicable rules or regulations</b> .
		Identify the <b>mission purposes</b> of the flight operations [VLOS, EVLOS, BVLOS - below 500 ft. (150 m) above ground level - above densely or sparsely populated areas] currently taking place in compliance with the <b>currently applicable rules or regulations</b> .
	Starting 1 Jan. 2020	Identify the <b>market sectors</b> in which drone flight operations [VLOS, EVLOS, BVLOS - below 500 ft. (150 m) above ground level - above densely or sparsely populated areas] that will take place <b>starting 1st January 2021 in compliance with the new EU Drone regulation</b> .
		Identify the <b>mission purposes</b> of the flight operations [VLOS, EVLOS, BVLOS - below 500 ft. (150 m) above ground level - above densely or sparsely populated areas] that will take place <b>starting 1st January 2021 in compliance with the new EU Drone regulation</b> .
	Obtain initial feedback on the use of <b>SORA / Standard Scenarios / Predefined Risk Assessment</b> . & <b>qualification to participate in the OPS RISK Survey</b> .	
OPS RISK Survey	Obtain detailed feedback on the use of <b>SORA / Standard Scenarios / Predefined Risk Assessment</b> .	

### Operator

All respondents to this survey are drone “Operators”. In the context of this survey, drone «Operator» should be understood as a company or organisation (non-governmental or governmental) conducting, or planning to conduct, commercial or non-commercial flight operations with drones.

### Types of Operation

#### **Commercial**

Flights carried out by companies for paying customers (incl. Flight Schools and Test & Demonstration Site Management organisations).

#### **Non Commercial**

Flights carried out by companies or organisations without external financial compensation from a customer.

Non-commercial operations include «Corporate Operations», which should be understood as: «Flights carried out by companies or organisations to meet their own internal requirements».

### Types of Operator

In the context of this survey, the following types of operators are recognised:

**Corporate Entity - Drone Manufacturer & Operator**

**Corporate Entity - Drone Operator**

**Corporate Entity - Flight School**

**Corporate Entity - Research**

**Corporate Entity - Test & Demonstration Site Management**

**Corporate Entity - U-Space Service Provider**

**Governmental Entity - Drone Operator**

(non-military; including fire civil defence, coast guard, customs authorities, emergency services, police, environmental & infrastructure maintenance agencies, fire brigades)

**Governmental Entity - Research**

**Academia / University**

**Non-governmental organisation (NGO)**

(e.g. Red Cross, Doctors Without Borders, environmental protection groups)

1	<b>Aerial Photography, Audio-Visual Production, Advertising</b>	Flight operations relative to the production of aerial imagery for educational & publicity & informational purposes.
2	<b>Agriculture, Fishery, Fish Farming, Forestry</b>	Flight operations relative to farming (crop cultivation & livestock breeding), inshore & offshore fishing, fish farming, tree cultivation.
3	<b>Aircraft System or Sub-system Production</b>	Flight operations relative to the research & development and production of drone systems or sub-systems.
4	<b>Cinema &amp; TV Industry</b>	Flight operations for the cinema & TV industry relative to the production of feature & documentary films and the creation of special effects.
5	<b>Construction &amp; Real Estate</b>	Flight operations for various purposes relative to all phases of construction & related promotional & sales activities. All applications except maintenance.
6	<b>Entertainment, Artistic Expression &amp; Sport</b>	Flight operations for public entertainment purposes, artistic expression, sporting events and drone races.
7	<b>Environmental Protection &amp; Wildlife Conservation</b>	Flight operations carried out with the purpose to contribute to maintaining or restoring the quality of the natural environment and protecting wildlife.
8	<b>Flight Training / Instruction</b>	Flight operations conducted by flight schools for the purpose of training/instruction of drone pilots (Duo & Solo Flights), qualification verification of pilot license holder (Check Flights) and flights conducted to maintain pilot competence.
9	<b>Heritage Site &amp; Historical Monument Management</b>	Flight operations (incl. maintenance) relative to the conservation & documentation of historical sites & monuments.
10	<b>Humanitarian Aid</b>	Flight operations carried out within the context of natural & man-made disasters by or for non-governmental organisations (NGOs) with the purpose to assist people in need.
11	<b>Insurance (Accident &amp; Claim Investigation)</b>	Flight operations by or for insurance companies.
12	<b>Maintenance</b>	Flight operations for maintenance purposes [e.g. aircraft hulls, buildings, critical infrastructure (breakwaters, bridges, cable cars, canals & locks, dams, dikes, harbours, railways, rivers, relay antennae, roads, highways, runways), industrial installations (e.g. chimneys, cooling towers, flare stacks, holding tanks, offshore platforms, power plants, powerlines, pipelines, pylons, quarries, refineries, solar farms, wind turbines, ships), housing & buildings (thermal isolation mapping)].
13	<b>Mining &amp; Exploration</b>	Flight operations related to exploration (incl. oil & gas), mining and quarry exploitation. All applications, except maintenance.

14	<b>Miscellaneous - Air Show</b>	Flight operation conducted within the context of a public air show.
15	<b>Miscellaneous - Demonstration</b>	Flight operations conducted for regulatory (certification) authorities or potential customers.
16	<b>Miscellaneous - Ferry/Positioning</b>	Delivery flights for the purpose of returning a drone to its base of operations, delivering a new drone from its place of manufacture to its customer, flying a drone from one base of operations to another or flying a drone to or from a maintenance facility for repairs, overhaul or other work.
17	<b>News Gathering &amp; Broadcasting</b>	Flight operations carried out for journalistic purposes.
18	<b>Policy Compliance &amp; Obtaining Legal Proof</b>	Flight missions conducted by international, regional or national governmental organisations (e.g. United Nations agencies, European Commission agencies, national agencies) or by contractors for such organisations, to verify compliance with specific policies and/or to obtain specific legal proof of non-compliance (e.g. International Criminal Court; illegal construction verification; non-respect of agricultural policies).
19	<b>Public Services &amp; Safety</b>	Flight operations conducted by or for civil protection, emergency services, fire brigades & firefighting services, public services (incl. weather & health services), rescue services and utility companies, relative to safety of the general public.
20	<b>Security &amp; Law Enforcement</b>	Flight operations conducted by or for municipal, regional or state police, border guards, coast guard, custom authorities, harbour authorities, authorities responsible for critical infrastructure & sensitive industrial site management.
21	<b>Remote Operations - Non-Sensing</b>	Flight operations with drones equipped with non-imaging payloads, or without any payload, for specific purposes other than indicated in this list.
22	<b>Remote Operations - Sensing</b>	Flight operations with drones equipped with imaging & non-imaging payloads for remote sensing purposes other than indicated in this list.
23	<b>Research &amp; Science</b>	Flight operations conducted for private or public research or scientific purposes. Includes flight operations carried out for the purpose of testing, experimentation, or validation of new concepts and/or technologies for company internal assessment purposes.
24	<b>Transport</b>	Flight carried out for the carriage & delivery of goods or persons.
25	<b>Utility Companies (Public &amp; Private)</b>	Corporate entity or governmental agency performing a service subject to governmental regulation (e.g. communications, gas, railways, transportation, water, WIFI). All applications, except maintenance.

## Terms & Explanations

### Flight Mission Purposes – 1/2

1	<b>Advertising</b>	Towing publicity banners, skywriting, airships with publicity projected from inside on the external envelope or mounted on the external envelope.
2	<b>Aerobatics, Special Effects &amp; Sport</b>	Flight operations for the cinema & TV industry and for public entertainment & sport purposes.
3	<b>Aerial Photography &amp; Film/Video Footage</b>	Production of aerial photography & film/video footage for the production of documentaries, advertisements/video clips, printed publications or news broadcasting (news illustration purposes on television).
4	<b>Broadcasting</b>	Production of aerial film/video footage for news coverage & illustration on TV.
5	<b>Deterring</b>	Flight operation with the purpose to chase animals (e.g. birds) from specific sites.
6	<b>Dispensing</b>	Aerial distribution of solids (e.g. fertiliser, granulates, insects, pamphlets, pellets, seeds, other).
7	<b>Exploration</b>	The act of searching the earth's surface & subsurface with the intent of finding minerals, oil, etc.
8	<b>Identification</b>	The process of recognizing as being a certain person or thing or activity.
9	<b>Inspection</b>	Examination with the intent to find faults, errors, problems, malfunctions or specific phenomena.
10	<b>Localisation</b>	Supplying the geographical coordinates of activities, faults, errors, malfunctions, equipment, structures, persons, livestock or specific phenomena.
11	<b>Manipulation</b>	The modification of a direction or position, or the displacement, of an inert object.
12	<b>Mapping</b>	Process of creating a diagrammatic representation (incl. 3D modelling).
13	<b>Measuring</b>	The process of measuring using a particular standard.
14	<b>Monitoring</b>	Observation on a regular basis over a period of time.
15	<b>Observation</b>	Examination of an activity, person, group, area or phenomena.
16	<b>Patrolling</b>	Searching for a specific activity, person, group or phenomena in a given geographical area on a regular basis..
17	<b>Relief Flight</b>	Flight carried out for humanitarian purposes to carry relief supplies such as food, clothing, shelter, medical and other items during or after an emergency and/or disaster.
18	<b>Search &amp; Rescue</b>	Looking for missing persons.
19	<b>Security</b>	Flights carried out to safeguard against unlawful acts
20	<b>Sensing</b>	Looking for & analysing or defining the geographical coordinates of phenomena (incl. weather) & transmitting or registering them.
21	<b>Sky Painting</b>	Flights carried out by drones equipped with various types of lighting and/or smoke generating devices to create an aerial spectacle.
22	<b>Sky Writing</b>	Flight carried out to create an aerial written message using smoke generated on the aircraft involved. A computer can generate the master plan and electronic signals can control the smoke output.

23	<b>Special Purpose</b>	Flights serving a specific purpose [e.g. communication & WIFI relay; (tethered) aerial electricity generation].
24	<b>Spotting</b>	Looking for an activity, object, person, group or phenomena & registering their geographical coordinates.
25	<b>Spraying</b>	The process of spreading liquid substances [e.g. insecticide, fertiliser]
26	<b>Surveillance</b>	Close observation of an activity, person, group, area or phenomena.
27	<b>Surveying</b>	Detailed inspection of a geo-referenced section of the earth's surface (incl. structures) with the purpose to study or measure altitudes, angles, distances, phenomena & structures flown over, and recording them.
28	<b>Testing</b>	Ascertaining a capability or correct functioning.
29	<b>Tracking</b>	The process of following something or someone.
30	<b>Transport - Goods</b>	Flight carried out for the carriage & delivery of goods.
31	<b>Transport - Persons</b>	Flight carried out for the carriage & delivery of persons.
32	<b>Validation</b>	Confirmation by examination and provision of objective evidence that the particular requirements for a specific intended use are fulfilled.
33	<b>Water Bombing</b>	Flight carried out to discharge large quantities of liquid on a fire with the intent to extinguish it or stop it from spreading.

## UAS OPS SURVEY

### SECTION 1 - Current Situation

- 1) The respondent declared that he/she is a drone operator.
- 2) The respondent indicated if he/she conducts:
  - “Commercial” operations; or
  - “Non-Commercial” operations.
- 3) The respondent could select:
  - Up to 4 Market Sectors in which he/she is currently active; and
  - Up to 5 Mission Purposes (currently being flown) in each selected Market Sector, indicating if the flight missions are:
    - ◆ VLOS, EVLOS, or BVLOS
    - ◆ Above densely or sparsely populated areas

The respondent selected a first Market Sector (Current) in which he/she is active, and then selected the Flight Missions being flown by him/her in this Market Sector on the next page. The respondent could then continue to a second Market Sector (2 of 4 Market Sectors – Current) in which he/she is active, followed by the corresponding Flight Mission(s) selection on the next page. Subsequently, the respondent could continue to the third and fourth Market Sectors in which he/she is active, and the corresponding Flight Mission(s) selection.

If the respondent is currently active in only 1 Market Sector, he/she could continue directly to the Market Sectors in which he/she plans to be active in the future (starting 1 January 2021).

If the respondent is not active in more than one Market Sector (Current), he/she could proceed directly to Section 2 – Situation Starting 1 January 2020.

### SECTION 2 - Situation Starting 1 January 2020

The respondent can select:

- Up to 4 Market Sectors in which he/she plans to be active in the future; and
- Up to 5 Mission Purposes that he/she anticipates to fly in each selected Market Sector, indicating if the flight missions are:
  - ◆ VLOS, EVLOS, or BVLOS
  - ◆ Above densely or sparsely populated areas

The procedure is identical to the procedure indicated above.

If the respondent is planning to be active in only one Market Sector in the future he/she can proceed directly to the survey section concerning SORA / Standard Scenarios / Predefined Risk Assessment.

### SECTION 3 - SORA / Standard Scenarios / Predefined Risk Assessment - Preliminary

This section has questions with two types of answers: Yes/No & multiple choice.

The purpose of this section is to identify the respondents with knowledge and/or experience with SORA which were then invited to contribute to the more detailed separate “OPS RISK” survey on the same subject matter.

## OPS RISK SURVEY

This is a separate survey that was nominally addressed to only the qualified respondents that were identified in the UAS OPS survey. It has questions with two types of answers: Yes/No & multiple choice.

The objective is to obtain feedback on the use of SORA, Standard Scenarios, and Predefined Risk Assessment.

**UAS OPS SURVEY**

**RESULTS**

@ye.films bretagne-vidéos.fr	France	DELAIR	France
360images.be	Belgium	Delta Advice	Germany
Actibot	Belgium	Delta Perspectives	Belgium
Actua Drone	France	DeltaCopter / European Drone School	Belgium
AEA Energy	Ireland	Doks. Innovation	Germany
Aerial Pictures	France	Domdrone	France
Aerial Ventures	Denmark	Drona InTheAirForYou	Spain
Aero Enterprise	Austria	Drone Class	Netherlands
Aeromedias	France	Drone Déjà Vu	Netherlands
AeroPyxis	France	Drone Effect	France
Aéro-Nautic Formation	France	Drone Engineering	France
Aertec Solutions	Spain	Drone et Patrimoine	France
African Drone Forum	UK	Drone Euskadi	Spain
AirDrone Melide	Spain	Drone Photo and Video Services	Ireland
Air Mobility by Setec	France	Drone R'Gie	Belgium
Airbus Defence and Space	Germany	Drone Supervision	France
AlphaLink Engineering	Germany	Drone2vues	France
Altametris	France	Dronea	France
Alticlip.fr	France	DroneDreams!	Netherlands
Altinime	France	Dronewatch	Netherlands
Alto Drones	Italy	Dronify	Netherlands
AML Technology	UK	Droning You	Spain
ANWB Medical Air Assistance	Netherlands	Dronivo	Germany
AOZ-LFPM	France	Dronotique	France
Applied IPR	UK	Dronude	Netherlands
Association À l'Ouest Images	France	Dunarea de Jos University of Galati	Serbia
ATE Akademie / Drone Safety	Germany	Dutch Filmgroup	Netherlands
Atechsys	France	Eagle Drones UK	UK
Athantor	France	EBS Construction	Ireland
Atlantique Expertises Drones	France	ecdron	Italy
Atmoview Drone - AniWalls Production	Belgium	E-Drone-Tech	France
AuG Kiel	Germany	Emerald Style Company	Ireland
Autonomous Flight Technology	Romania	ENAC - Ecole Nationale de l'Aviation Civile	France
AVCA Logistics	Spain	Engie	France
AVR Ingénierie	France	Eska Drones	France
Avtrain	Ireland	ESSP-SAS	Spain
Azur Drones	France	ESTACA	France
BAM Galère	Belgium	EuroUSC-Benelux	Belgium
bavAIRia	Germany	Faculty of Aeronautics	Slovakia
BE Drone & Engineering	Belgium	FADA-CATEC	Spain
Bionic Eye (The)	UK	FADA-CATEC - Atlas Test Range	Spain
Boskalis Nederland	Netherlands	Fellner Organisation	Poland
Bouygues E&S EnerTrans	Switzerland	Ferrovia	Spain
Bureau de géomètres-Experts Morimont	Belgium	Feuerwehr	Germany
BVdrone	Finland	FG Services Aériens	France
BVL de Winter	Netherlands	FHU eMPi Piotr Matecki	Poland
Calepsum Aeronautics	France	Firefighter Department Trento	Italy
Capture4cad	France	Flying Manta	France
CARAH	Belgium	FlyNex	Germany
Casper Smit Fotografie	Netherlands	Flyover di Vania Di Francesco	Italy
Centre de formation Olivier Careau - Espace Modélisme Argeles Sur Mer	France	Forstliche Versuchs- & Forschungsanstalt Baden-Wuerttemberg	Germany
Centre Drones Services	France	Fotokite	Switzerland
City of Jyväskylä	Finland	Fotostudio Stebler	Switzerland
Civil Aviation Authority	Poland	France Survol	France
Cofferon - Self Employed	Ireland	Fraunhofer IFAM	Germany
Colibrex	Germany	Freiwillige Feuerwehr Hechingen	Germany
Condor IMS	Germany	FuVeX	Spain
Copter Squad UAS UG	Germany	Geo Infra	Netherlands
Copterphot	Switzerland	Geodron Solutions	Spain
D3E Electronique	France	Georesearch Forschungsgesellschaft	Austria
Dany Starck	Belgium	GEOSat	Germany
DB Engineering & Consulting	Germany	GeoTech	Belgium
Dcomdrone by DProds	France	GeoZICHT - Drone Projecten	Netherlands

Germandrones	Germany	Roberto Pavoni	Italy
Goldy Aviations	Belgium	Rohner Bedachungen & Spenglerei	Switzerland
Gran Sasso Science Institute	Italy	Rotterdam Brands and more	Netherlands
GrijsGroen Advies	Netherlands	RPAS Services	Netherlands
HD for YOU	Belgium	Rusca	Italy
Heijdens Karwei Producties	Netherlands	Rutger Lamers Fotoreportages	Netherlands
Heliseo SAGL	Switzerland	SATS	Finland
Henri Coanda Labs	Italy	SBB CFF FFS - Swiss Federal Railways	Switzerland
Hit & Run	Belgium	Scandrone	France
Hivebotics	France	SDIS - Service Départemental	
Holding The Drones	Netherlands	d'Incendie et de Secours 11	France
Hubschrauberzentrum	Germany	SDIS - Service Départemental	
IAV	Germany	d'Incendie et de Secours 58	France
ID2MOVE	Belgium	Seateam Aviation	France
ILT - Human Environment & Transport Inspectorate	Netherlands	Securitas Belgium	Belgium
Insensiv	Germany	Shetland Flyer Aerial Media	UK
Instadrone Pau	France	Siemens	Germany
Interconsulting	Italy	SilentWings	Germany
ISE	Spain	Silesian Aviation Cluster	Poland
KEMEA	Greece	Sky4D	Belgium
Knuckles5	Ukraine	Skycorp	Estonia
Koetter Group	Germany	SkyFun	Belgium
Kolordrone	France	Skyledrone	Netherlands
Kopter-Profi	Germany	Skyline	Italy
Kragten	Netherlands	Snowdrop UAS	UK
Lancs Fire Service	UK	SOTREFI	Belgium
Leica Geosystems	Germany	Space53	Netherlands
Leitek Innovative Solutions	Portugal	SpaceFactory	Spain
Leondron	Spain	Sport Turf Consulting	Italy
Liebenau Gebäude- & Anlagenservice	Germany	Star Engineering	France
Live Emotions Studio	Belgium	Stichting Kenniscentrum Reeën	Netherlands
Logiroad	France	STRABAG	Germany
Luchtbeeld.nl	Netherlands	SupAirVision	France
Lukas	France	SVZD - Swiss Federation of Civil Drones	Switzerland
LZCreation	Belgium	Tech Drone Audiovisual Services	Spain
Martin Detry	Belgium	Technical University of Košice	Slovakia
Martin Keydel - Aerial Karlsruhe	Germany	Techn. Hochschule Ostwestfalen-Lippe	Germany
MB-Drones	Netherlands	Télépilote	France
MD Drone	Belgium	Tethered Drone Systems	UK
MinuteDrone	France	Thales Avionics	France
National Aviation University	Ukraine	Thales AVS	France
Neva Aerospace	France	Thrust-Intelligent UAV Systems	Lithuania
NLR – Netherlands Aerospace Centre	Netherlands	Thyssenagas	Germany
NOI Techpark	Italy	Tomedia	Belgium
Oasis	UK	UAS Consulting	Belgium
Oceansport Limited	Ireland	UAV Navigation	Spain
Office National des Forêts	France	UAV Works Group.	Spain
OO-Drones	Belgium	UniversalDrone	France
Origin Stories	Netherlands	Universität Rostock	Germany
Paisajes Gallegos	Spain	Université de Liège	Belgium
Pascal Themans Productions	Belgium	Unmanned Systems Bulgaria	Bulgaria
Perlaux Graphics	Belgium	Vecteur Tech	France
Phoenix Aerial	Italy	Visiodrone	Belgium
Pilgrim Technology	France	VisioFly	France
Pix-D	Belgium	VisualSky	Switzerland
PixxelAIR	Germany	Webinfomd	Belgium
PJF Drone	Spain	Yannick Andrea	Switzerland
Prodrones	France	Zangano	Spain
Realizacja Obrazu Marcin Kules	Poland	Zenit Drones	Spain
Rijkswaterstaat	Netherlands	Zetta Drones	France
Rijkswaterstaat	Netherlands	Zipline	France
RM Drones	Spain		

## Survey Respondents – Basic Numbers

**UAS OPS Survey Respondents: 247**

### From 22 Countries – In Alphabetical Order

Austria	2
Belgium	34
Bulgaria	1
Denmark	1
Estonia	1
Finland	3
France	64

Germany	34
Greece	1
Ireland	7
Italy	13
Lithuania	1
Netherlands	30
Poland	5
Portugal	1

Romania	1
Serbia	1
Slovakia	2
Spain	23
Switzerland	10
Ukraine	2
United Kingdom	10

### From 22 Countries – In Order of Quantity of Participants/Country

France	64
Belgium	34
Germany	34
Netherlands	30
Spain	23
Italy	13
Switzerland	10

United Kingdom	10
Ireland	7
Poland	5
Finland	3
Austria	2
Slovakia	2
Ukraine	2
Bulgaria	1

Denmark	1
Estonia	1
Greece	1
Lithuania	1
Portugal	1
Romania	1
Serbia	1

### Operator Categories – Quantity/Category

<b>188</b>	<b>Commercial Operators</b> Conduct flights for paying customers..
<b>59</b>	<b>Non Commercial Operators</b> Carry out flights without external financial compensation from a customer. Non-commercial operations include “Corporate Operations”, which should be understood as: “Flights carried out by companies or organisations to meet their own internal requirements”.

### Operator Categories – Quantity/Category

Corporate Entity	216
Governmental Entity	12
Research Organisation (non-commercial)	5
Association, Federation, Union, TechCluster	6
Academia / University	8

### SORA – Comprehension & Use – Quantity

Understand the SORA methodology	155
Use SORA	86
Have submitted a SORA to their NAA	47

**OPS RISK Survey Respondents: 20**

**In Alphabetical Order**

MARKET SECTORS - CURRENT	FLIGHT ENVELOPES							Total
	VLOS	EVLOS	BVLOS	VLOS EVLOS	VLOS BVLOS	EVLOS BVLOS	VLOS EVLOS BVLOS	
1 Aerial Photography, Audio-Visual, Production, Advertising	140	3	3	27	14	1	18	206
2 Agriculture, Fishery, Fish Farming, Forestry	64	2	23	5	10	0	39	143
3 Aircraft System or Sub-system Production	23	0	2	2	6	2	22	57
4 Cinema & TV Industry	57	0	1	8	7	1	8	82
5 Construction & Real Estate	180	19	7	20	11	1	24	262
6 Entertainment, Artistic Expression & Sport	13	0	4	7	0	0	5	29
7 Environmental Protection & Wildlife Conservation	55	4	13	19	14	0	19	124
8 Flight Training / Instruction	40	1	7	4	18	0	38	108
9 Heritage Site & Historical Monument Management	17	0	1	0	5	1	2	26
10 Humanitarian Aid	10	0	6	1	0	0	7	24
11 Insurance (Accident & Claim Investigation)	2	0	0	7	0	0	0	9
12 Maintenance	125	6	11	29	27	0	33	231
13 Mining & Exploration	19	3	21	1	0	0	32	76
14 Miscellaneous - Air Show	2	0	0	0	0	0	0	2
15 Miscellaneous - Demonstration	6	0	1	1	1	0	4	13
16 Miscellaneous - Ferry/Positioning	0	0	1	0	0	0	0	1
17 News Gathering & Broadcasting	8	0	0	0	0	0	0	8
18 Policy Compliance & Obtaining Legal Proof	0	0	0	0	0	0	0	0
19 Public Services & Safety	48	0	18	8	22	0	36	132
20 Security & Law Enforcement	6	0	33	1	3	0	19	62
21 Remote Operations - Non-Sensing	0	0	2	0	0	0	2	4
22 Remote Operations - Sensing	9	2	7	3	3	2	1	27
23 Research & Science	91	0	25	19	57	0	69	261
24 Transport	0	0	14	4	5	0	0	23
25 Utility Companies (Public & Private)	26	0	5	2	0	5	2	40
Total	941	40	205	168	203	13	380	1950



**MARKET SECTORS**  
**Current Status**  
**FLIGHT ENVELOPES**



In Decreasing Order of Importance

MARKET SECTORS - CURRENT	FLIGHT ENVELOPES							Total
	VLOS	EVLOS	BVLOS	VLOS EVLOS	VLOS BVLOS	EVLOS BVLOS	VLOS EVLOS BVLOS	
1 Construction & Real Estate	180	19	7	20	11	1	24	262
2 Research & Science	91	0	25	19	57	0	69	261
3 Maintenance	125	6	11	29	27	0	33	231
4 Aerial Photography, Audio-Visual, Production, Advertising	140	3	3	27	14	1	18	206
5 Agriculture, Fishery, Fish Farming, Forestry	64	2	23	5	10	0	39	143
6 Public Services & Safety	48	0	18	8	22	0	36	132
7 Environmental Protection & Wildlife Conservation	55	4	13	19	14	0	19	124
8 Flight Training / Instruction	40	1	7	4	18	0	38	108
9 Cinema & TV Industry	57	0	1	8	7	1	8	82
10 Mining & Exploration	19	3	21	1	0	0	32	76
11 Security & Law Enforcement	6	0	33	1	3	0	19	62
12 Aircraft System or Sub-system Production	23	0	2	2	6	2	22	57
13 Utility Companies (Public & Private)	26	0	5	2	0	5	2	40
14 Entertainment, Artistic Expression & Sport	13	0	4	7	0	0	5	29
15 Remote Operations - Sensing	9	2	7	3	3	2	1	27
16 Heritage Site & Historical Monument Management	17	0	1	0	5	1	2	26
17 Humanitarian Aid	10	0	6	1	0	0	7	24
18 Transport	0	0	14	4	5	0	0	23
19 Miscellaneous - Demonstration	6	0	1	1	1	0	4	13
20 Insurance (Accident & Claim Investigation)	2	0	0	7	0	0	0	9
21 News Gathering & Broadcasting	8	0	0	0	0	0	0	8
22 Remote Operations - Non-Sensing	0	0	2	0	0	0	2	4
23 Miscellaneous - Air Show	2	0	0	0	0	0	0	2
24 Miscellaneous - Ferry/Positioning	0	0	1	0	0	0	0	1
25 Policy Compliance & Obtaining Legal Proof	0	0	0	0	0	0	0	0
<b>Total</b>	<b>941</b>	<b>40</b>	<b>205</b>	<b>168</b>	<b>203</b>	<b>13</b>	<b>380</b>	<b>1950</b>



**MARKET SECTORS**  
**Current Status**  
**FLIGHT ZONES**



**In Alphabetical Order**

MARKET SECTORS - CURRENT		FLIGHT ZONES			Total
		Densely Populated (Only)	Sparsely Populated (Only)	Densely & Sparsely Populated	
1	Aerial Photography, Audio-Visual, Production, Advertising	20	90	136	246
2	Agriculture, Fishery, Fish Farming, Forestry	7	107	9	123
3	Aircraft System or Sub-system Production	10	37	11	58
4	Cinema & TV Industry	9	27	48	84
5	Construction & Real Estate	48	91	116	255
6	Entertainment, Artistic Expression & Sport	1	15	12	28
7	Environmental Protection & Wildlife Conservation	2	81	32	115
8	Flight Training / Instruction	6	23	74	103
9	Heritage Site & Historical Monument Management	0	3	22	25
10	Humanitarian Aid	0	7	19	26
11	Insurance (Accident & Claim Investigation)	6	3	0	9
12	Maintenance	27	98	108	233
13	Mining & Exploration	0	48	25	73
14	Miscellaneous - Air Show	0	2	0	2
15	Miscellaneous - Demonstration	0	7	5	12
16	Miscellaneous - Ferry/Positioning	0	1	0	1
17	News Gathering & Broadcasting	0	3	4	7
18	Policy Compliance & Obtaining Legal Proof	0	0	0	0
19	Public Services & Safety	8	33	82	123
20	Remote Operations - Non-Sensing	11	12	46	69
21	Remote Operations - Sensing	0	2	2	4
22	Research & Science	2	17	7	26
23	Security & Law Enforcement	7	149	97	253
24	Transport	1	6	13	20
25	Utility Companies (Public & Private)	6	10	24	40
<b>Total</b>		<b>171</b>	<b>872</b>	<b>892</b>	<b>1935</b>

**In Decreasing Order of Importance**

MARKET SECTORS - CURRENT		FLIGHT ZONES			Total
		Densely Populated (Only)	Sparsely Populated (Only)	Densely & Sparsely Populated	
1	Construction & Real Estate	48	91	116	255
2	Security & Law Enforcement	7	149	97	253
3	Aerial Photography, Audio-Visual, Production, Advertising	20	90	136	246
4	Maintenance	27	98	108	233
5	Agriculture, Fishery, Fish Farming, Forestry	7	107	9	123
6	Public Services & Safety	8	33	82	123
7	Environmental Protection & Wildlife Conservation	2	81	32	115
8	Flight Training / Instruction	6	23	74	103
9	Cinema & TV Industry	9	27	48	84
10	Mining & Exploration	0	48	25	73
11	Remote Operations - Non-Sensing	11	12	46	69
12	Aircraft System or Sub-system Production	10	37	11	58
13	Utility Companies (Public & Private)	6	10	24	40
14	Entertainment, Artistic Expression & Sport	1	15	12	28
15	Humanitarian Aid	0	7	19	26
16	Research & Science	2	17	7	26
17	Heritage Site & Historical Monument Management	0	3	22	25
18	Transport	1	6	13	20
19	Miscellaneous - Demonstration	0	7	5	12
20	Insurance (Accident & Claim Investigation)	6	3	0	9
21	News Gathering & Broadcasting	0	3	4	7
22	Remote Operations - Sensing	0	2	2	4
23	Miscellaneous - Air Show	0	2	0	2
24	Miscellaneous - Ferry/Positioning	0	1	0	1
25	Policy Compliance & Obtaining Legal Proof	0	0	0	0
<b>Total</b>		<b>171</b>	<b>872</b>	<b>892</b>	<b>1935</b>



**FLIGHT MISSIONS**  
**Current Status**  
**FLIGHT ENVELOPES**



In Alphabetical Order

FLIGHT MISSIONS - CURRENT	FLIGHT ENVELOPES							Total
	VLOS	EVLOS	BVLOS	VLOS EVLOS	VLOS BVLOS	EVLOS BVLOS	VLOS EVLOS BVLOS	
1 Advertising	13	0	0	4	2	0	2	21
2 Aerobatics, Special Effects & Sport	20	0	0	7	0	0	5	32
3 Aerial Photography & Film/Video Footage	189	6	4	24	17	0	42	282
4 Broadcasting	49	1	1	4	3	0	9	67
5 Deterring	6	0	0	2	0	0	2	10
6 Dispensing	15	0	4	3	3	0	5	30
7 Exploration	4	0	3	0	2	0	5	14
8 Identification	18	0	9	3	5	0	10	45
9 Inspection	128	5	18	23	19	1	37	231
10 Localisation	55	2	12	6	12	2	21	110
11 Manipulation	17	4	2	3	1	1	8	36
12 Mapping	20	0	8	2	5	1	25	61
13 Measuring	59	5	5	9	12	0	16	106
14 Monitoring	74	4	12	20	12	1	17	140
15 Observation	44	2	13	13	13	1	19	105
16 Patrolling	6	0	10	0	2	0	6	24
17 Relief Flight	18	0	42	0	10	0	23	93
18 Search & Rescue	14	0	6	2	8	0	10	40
19 Security	1	1	6	0	3	0	11	22
20 Sensing	13	0	7	4	5	1	7	37
21 Sky Painting	2	0	0	0	0	0	0	2
22 Sky Writing	3	0	0	0	0	0	0	3
23 Special Purpose	4	0	6	4	0	0	1	15
24 Spotting	16	2	14	2	10	0	16	60
25 Spraying	6	0	0	1	0	0	0	7
26 Surveillance	13	0	7	1	9	1	11	42
27 Surveying	68	6	17	14	14	0	27	146
28 Testing	38	1	9	9	18	2	30	107
29 Tracking	24	0	3	0	9	1	16	53
30 Transport - Goods	2	0	11	4	2	0	2	21
31 Transport - Persons	1	0	1	0	0	0	1	3
32 Validation	19	1	5	4	12	1	13	55
33 Water Bombing	0	0	0	0	0	0	1	1
<b>Total</b>	<b>959</b>	<b>40</b>	<b>235</b>	<b>168</b>	<b>208</b>	<b>13</b>	<b>398</b>	<b>2021</b>

**In Decreasing Order of Importance**

FLIGHT MISSIONS - CURRENT	FLIGHT ENVELOPES							Total
	VLOS	EVLOS	BVLOS	VLOS EVLOS	VLOS BVLOS	EVLOS BVLOS	VLOS EVLOS BVLOS	
1 Aerial Photography & Film/Video Footage	189	6	4	24	17	0	42	282
2 Inspection	128	5	18	23	19	1	37	231
3 Surveying	68	6	17	14	14	0	27	146
4 Monitoring	74	4	12	20	12	1	17	140
5 Localisation	55	2	12	6	12	2	21	110
6 Testing	38	1	9	9	18	2	30	107
7 Measuring	59	5	5	9	12	0	16	106
8 Observation	44	2	13	13	13	1	19	105
9 Relief Flight	18	0	42	0	10	0	23	93
10 Broadcasting	49	1	1	4	3	0	9	67
11 Mapping	20	0	8	2	5	1	25	61
12 Spotting	16	2	14	2	10	0	16	60
13 Validation	19	1	5	4	12	1	13	55
14 Tracking	24	0	3	0	9	1	16	53
15 Identification	18	0	9	3	5	0	10	45
16 Surveillance	13	0	7	1	9	1	11	42
17 Search & Rescue	14	0	6	2	8	0	10	40
18 Sensing	13	0	7	4	5	1	7	37
19 Manipulation	17	4	2	3	1	1	8	36
20 Aerobatics, Special Effects & Sport	20	0	0	7	0	0	5	32
21 Dispensing	15	0	4	3	3	0	5	30
22 Patrolling	6	0	10	0	2	0	6	24
23 Security	1	1	6	0	3	0	11	22
24 Advertising	13	0	0	4	2	0	2	21
25 Transport - Goods	2	0	11	4	2	0	2	21
26 Special Purpose	4	0	6	4	0	0	1	15
27 Exploration	4	0	3	0	2	0	5	14
28 Deterring	6	0	0	2	0	0	2	10
29 Spraying	6	0	0	1	0	0	0	7
30 Sky Writing	3	0	0	0	0	0	0	3
31 Transport - Persons	1	0	1	0	0	0	1	3
32 Sky Painting	2	0	0	0	0	0	0	2
33 Water Bombing	0	0	0	0	0	0	1	1
<b>Total</b>	<b>959</b>	<b>40</b>	<b>235</b>	<b>168</b>	<b>208</b>	<b>13</b>	<b>398</b>	<b>2021</b>

**In Alphabetical Order**

FLIGHT MISSION - CURRENT		FLIGHT ZONES			Total
		Densely Populated	Sparsely Populated	Densely & Sparsely Populated	
1	Advertising	3	14	8	25
2	Aerobatics, Special Effects & Sport	1	18	15	34
3	Aerial Photography & Film/Video Footage	32	95	164	291
4	Broadcasting	5	21	54	80
5	Deterring	0	6	5	11
6	Dispensing	1	20	6	27
7	Exploration	0	11	4	15
8	Identification	10	23	29	62
9	Inspection	22	87	102	211
10	Localisation	7	60	41	108
11	Manipulation	1	20	8	29
12	Mapping	1	33	20	54
13	Measuring	12	43	47	102
14	Monitoring	14	55	58	127
15	Observation	13	43	60	116
16	Patrolling	2	17	7	26
17	Relief Flight	0	7	12	19
18	Search & Rescue	5	18	21	44
19	Security	2	9	17	28
20	Sensing	1	14	19	34
21	Sky Painting	0	3	0	3
22	Sky Writing	0	4	0	4
23	Special Purpose	0	13	4	17
24	Spotting	3	28	22	53
25	Spraying	0	6	1	7
26	Surveillance	4	22	16	42
27	Surveying	13	61	62	136
28	Testing	5	60	34	99
29	Tracking	5	14	9	28
30	Transport - Goods	1	5	16	22
31	Transport - Persons	0	2	3	5
32	Validation	8	40	27	75
33	Water Bombing	0	0	1	1
<b>Total</b>		<b>171</b>	<b>872</b>	<b>892</b>	<b>1935</b>

**In Decreasing Order of Importance**

FLIGHT MISSION - CURRENT		FLIGHT ZONES			Total
		Densely Populated	Sparsely Populated	Densely & Sparsely Populated	
1	Aerial Photography & Film/Video Footage	32	95	164	291
2	Inspection	22	87	102	211
3	Surveying	13	61	62	136
4	Monitoring	14	55	58	127
5	Observation	13	43	60	116
6	Localisation	7	60	41	108
7	Measuring	12	43	47	102
8	Testing	5	60	34	99
9	Broadcasting	5	21	54	80
10	Validation	8	40	27	75
11	Identification	10	23	29	62
12	Mapping	1	33	20	54
13	Spotting	3	28	22	53
14	Search & Rescue	5	18	21	44
15	Surveillance	4	22	16	42
16	Aerobatics, Special Effects & Sport	1	18	15	34
17	Sensing	1	14	19	34
18	Manipulation	1	20	8	29
19	Security	2	9	17	28
20	Tracking	5	14	9	28
21	Dispensing	1	20	6	27
22	Patrolling	2	17	7	26
23	Advertising	3	14	8	25
24	Transport - Goods	1	5	16	22
25	Relief Flight	0	7	12	19
26	Special Purpose	0	13	4	17
27	Exploration	0	11	4	15
28	Deterring	0	6	5	11
29	Spraying	0	6	1	7
30	Transport - Persons	0	2	3	5
31	Sky Writing	0	4	0	4
32	Sky Painting	0	3	0	3
33	Water Bombing	0	0	1	1
<b>Total</b>		<b>171</b>	<b>872</b>	<b>892</b>	<b>1935</b>

In Alphabetical Order

MARKET SECTORS - FUTURE	FLIGHT ENVELOPES							Total
	VLOS	EVLOS	BVLOS	VLOS EVLOS	VLOS BVLOS	EVLOS BVLOS	VLOS EVLOS BVLOS	
1 Aerial Photography, Audio-Visual, Production, Advertising	70	4	2	41	8	0	21	146
2 Agriculture, Fishery, Fish Farming, Forestry	44	1	14	14	22	0	73	168
3 Aircraft System or Sub-system Production	17	0	1	1	3	1	13	36
4 Cinema & TV Industry	18	0	0	5	3	0	5	31
5 Construction & Real Estate	63	2	8	23	39	0	25	160
6 Entertainment, Artistic Expression & Sport	3	0	1	2	6	0	8	20
7 Environmental Protection & Wildlife Conservation	22	0	15	14	20	3	23	97
8 Flight Training / Instruction	14	16	19	24	26	0	75	174
9 Heritage Site & Historical Monument Management	30	1	0	0	5	0	24	60
10 Humanitarian Aid	18	0	14	0	7	0	4	43
11 Insurance (Accident & Claim Investigation)	14	0	0	9	4	0	7	34
12 Maintenance	54	0	22	22	33	1	67	199
13 Mining & Exploration	9	0	12	0	4	0	20	45
14 Miscellaneous - Air Show	0	0	0	2	0	0	0	2
15 Miscellaneous - Demonstration	2	0	2	0	3	1	1	9
16 Miscellaneous - Ferry/Positioning	0	0	0	0	0	0	0	0
17 News Gathering & Broadcasting	2	0	0	0	2	0	2	6
18 Policy Compliance & Obtaining Legal Proof	5	0	0	2	0	0	6	13
19 Public Services & Safety	25	2	16	1	8	3	29	84
20 Security & Law Enforcement	18	3	41	0	3	0	19	84
21 Remote Operations - Non-Sensing	0	0	0	2	7	0	0	9
22 Remote Operations - Sensing	4	0	5	3	8	0	6	26
23 Research & Science	44	3	14	12	48	0	116	237
24 Transport	0	0	24	0	5	1	14	44
25 Utility Companies (Public & Private)	4	0	6	1	12	0	20	43
<b>Total</b>	<b>480</b>	<b>32</b>	<b>216</b>	<b>178</b>	<b>276</b>	<b>10</b>	<b>578</b>	<b>1770</b>

**In Decreasing Order of Importance**

MARKET SECTORS - FUTURE	FLIGHT ENVELOPES							Total
	VLOS	EVLOS	BVLOS	VLOS EVLOS	VLOS BVLOS	EVLOS BVLOS	VLOS EVLOS BVLOS	
1 Research & Science	44	3	14	12	48	0	116	237
2 Maintenance	54	0	22	22	33	1	67	199
3 Flight Training / Instruction	14	16	19	24	26	0	75	174
4 Agriculture, Fishery, Fish Farming, Forestry	44	1	14	14	22	0	73	168
5 Construction & Real Estate	63	2	8	23	39	0	25	160
6 Aerial Photography, Audio-Visual, Production, Advertising	70	4	2	41	8	0	21	146
7 Environmental Protection & Wildlife Conservation	22	0	15	14	20	3	23	97
8 Public Services & Safety	25	2	16	1	8	3	29	84
9 Security & Law Enforcement	18	3	41	0	3	0	19	84
10 Heritage Site & Historical Monument Management	30	1	0	0	5	0	24	60
11 Mining & Exploration	9	0	12	0	4	0	20	45
12 Transport	0	0	24	0	5	1	14	44
13 Humanitarian Aid	18	0	14	0	7	0	4	43
14 Utility Companies (Public & Private)	4	0	6	1	12	0	20	43
15 Aircraft System or Sub-system Production	17	0	1	1	3	1	13	36
16 Insurance (Accident & Claim Investigation)	14	0	0	9	4	0	7	34
17 Cinema & TV Industry	18	0	0	5	3	0	5	31
18 Remote Operations - Sensing	4	0	5	3	8	0	6	26
19 Entertainment, Artistic Expression & Sport	3	0	1	2	6	0	8	20
20 Policy Compliance & Obtaining Legal Proof	5	0	0	2	0	0	6	13
21 Miscellaneous - Demonstration	2	0	2	0	3	1	1	9
22 Remote Operations - Non-Sensing	0	0	0	2	7	0	0	9
23 News Gathering & Broadcasting	2	0	0	0	2	0	2	6
24 Miscellaneous - Air Show	0	0	0	2	0	0	0	2
25 Miscellaneous - Ferry/Positioning	0	0	0	0	0	0	0	0
Total	480	32	216	178	276	10	578	1770

In Alphabetical Order

MARKET SECTORS - FUTURE		FLIGHT ZONES			Total
		Densely Populated (Only)	Sparsely Populated (Only)	Sparsely & Densely Populated	
1	Aerial Photography, Audio-Visual, Production, Advertising	39	11	115	165
2	Agriculture, Fishery, Fish Farming, Forestry	9	124	28	161
3	Aircraft System or Sub-system Production	2	19	19	40
4	Cinema & TV Industry	7	5	20	32
5	Construction & Real Estate	21	44	83	148
6	Entertainment, Artistic Expression & Sport	2	4	14	20
7	Environmental Protection & Wildlife Conservation	10	38	56	104
8	Flight Training / Instruction	15	56	106	177
9	Heritage Site & Historical Monument Management	6	9	49	64
10	Humanitarian Aid	0	20	21	41
11	Insurance (Accident & Claim Investigation)	0	0	34	34
12	Maintenance	9	51	130	190
13	Mining & Exploration	6	29	8	43
14	Miscellaneous - Air Show	0	0	2	2
15	Miscellaneous - Demonstration	1	2	5	8
16	Miscellaneous - Ferry/Positioning	0	0	0	0
17	News Gathering & Broadcasting	0	0	6	6
18	Policy Compliance & Obtaining Legal Proof	3	0	9	12
19	Public Services & Safety	12	19	59	90
20	Remote Operations - Non-Sensing	8	17	53	78
21	Remote Operations - Sensing	1	3	3	7
22	Research & Science	0	8	14	22
23	Security & Law Enforcement	1	95	128	224
24	Transport	1	6	30	37
25	Utility Companies (Public & Private)	0	16	28	44
<b>Total</b>		<b>153</b>	<b>576</b>	<b>1020</b>	<b>1749</b>

In Decreasing Order of Importance

MARKET SECTORS - FUTURE	FLIGHT ZONES			Total
	Densely Populated (Only)	Sparsely Populated (Only)	Sparsely & Densely Populated	
1 Security & Law Enforcement	1	95	128	224
2 Maintenance	9	51	130	190
3 Flight Training / Instruction	15	56	106	177
4 Aerial Photography, Audio-Visual, Production, Advertising	39	11	115	165
5 Agriculture, Fishery, Fish Farming, Forestry	9	124	28	161
6 Construction & Real Estate	21	44	83	148
7 Environmental Protection & Wildlife Conservation	10	38	56	104
8 Public Services & Safety	12	19	59	90
9 Remote Operations - Non-Sensing	8	17	53	78
10 Heritage Site & Historical Monument Management	6	9	49	64
11 Utility Companies (Public & Private)	0	16	28	44
12 Mining & Exploration	6	29	8	43
13 Humanitarian Aid	0	20	21	41
14 Aircraft System or Sub-system Production	2	19	19	40
15 Transport	1	6	30	37
16 Insurance (Accident & Claim Investigation)	0	0	34	34
17 Cinema & TV Industry	7	5	20	32
18 Research & Science	0	8	14	22
19 Entertainment, Artistic Expression & Sport	2	4	14	20
20 Policy Compliance & Obtaining Legal Proof	3	0	9	12
21 Miscellaneous - Demonstration	1	2	5	8
22 Remote Operations - Sensing	1	3	3	7
23 News Gathering & Broadcasting	0	0	6	6
24 Miscellaneous - Air Show	0	0	2	2
25 Miscellaneous - Ferry/Positioning	0	0	0	0
<b>Total</b>	<b>153</b>	<b>576</b>	<b>1020</b>	<b>1749</b>

**In Alphabetical Order**

FLIGHT MISSIONS - FUTURE	FLIGHT ENVELOPE							Total
	VLOS	EVLOS	BVLOS	VLOS EVLOS	VLOS BVLOS	EVLOS BVLOS	VLOS EVLOS BVLOS	
1 Advertising	6	1	0	4	2	0	1	14
2 Aerobatics, Special Effects & Sport	3	0	0	7	1	0	7	18
3 Aerial Photography & Film/Video Footage	105	7	7	38	22	1	44	224
4 Broadcasting	18	1	0	13	2	0	10	44
5 Deterring	6	0	1	3	1	0	4	15
6 Dispensing	16	1	2	3	2	0	8	32
7 Exploration	2	0	4	0	1	0	5	12
8 Identification	12	2	8	6	9	0	21	58
9 Inspection	53	2	20	23	30	2	61	191
10 Localisation	22	2	14	8	20	0	40	106
11 Manipulation	10	0	6	2	5	0	9	32
12 Mapping	12	0	5	6	12	0	27	62
13 Measuring	27	1	7	9	21	0	35	100
14 Monitoring	35	1	19	14	24	0	41	134
15 Observation	24	3	13	10	16	0	28	94
16 Patrolling	2	1	5	0	1	0	7	16
17 Relief Flight	1	0	14	0	4	0	7	26
18 Search & Rescue	10	5	7	1	9	1	16	49
19 Security	1	1	6	3	5	0	9	25
20 Sensing	5	1	9	0	6	0	12	33
21 Sky Painting	4	0	0	0	1	0	0	5
22 Sky Writing	4	0	0	0	1	0	0	5
23 Special Purpose	5	0	4	2	4	0	10	25
24 Spotting	6	1	7	3	7	0	18	42
25 Spraying	10	0	3	1	1	0	8	23
26 Surveillance	5	0	6	0	4	0	18	33
27 Surveying	36	1	13	10	22	2	45	129
28 Testing	15	0	10	3	21	1	34	84
29 Tracking	8	0	2	0	2	0	12	24
30 Transport - Goods	0	0	10	0	4	2	11	27
31 Transport - Persons	0	0	2	2	0	0	0	4
32 Validation	15	1	10	7	16	1	28	78
33 Water Bombing	2	0	0	0	0	1	2	5
<b>Total</b>	<b>480</b>	<b>32</b>	<b>214</b>	<b>178</b>	<b>276</b>	<b>11</b>	<b>578</b>	<b>1769</b>

**In Decreasing Order of Importance**

FLIGHT MISSIONS - FUTURE		FLIGHT ENVELOPE						Total	
		VLOS	EVLOS	BVLOS	VLOS EVLOS	VLOS BVLOS	EVLOS BVLOS		VLOS EVLOS BVLOS
1	Aerial Photography & Film/Video Footage	105	7	7	38	22	1	44	224
2	Inspection	53	2	20	23	30	2	61	191
3	Monitoring	35	1	19	14	24	0	41	134
4	Surveying	36	1	13	10	22	2	45	129
5	Localisation	22	2	14	8	20	0	40	106
6	Measuring	27	1	7	9	21	0	35	100
7	Observation	24	3	13	10	16	0	28	94
8	Testing	15	0	10	3	21	1	34	84
9	Validation	15	1	10	7	16	1	28	78
10	Mapping	12	0	5	6	12	0	27	62
11	Identification	12	2	8	6	9	0	21	58
12	Search & Rescue	10	5	7	1	9	1	16	49
13	Broadcasting	18	1	0	13	2	0	10	44
14	Spotting	6	1	7	3	7	0	18	42
15	Sensing	5	1	9	0	6	0	12	33
16	Surveillance	5	0	6	0	4	0	18	33
17	Dispensing	16	1	2	3	2	0	8	32
18	Manipulation	10	0	6	2	5	0	9	32
19	Transport - Goods	0	0	10	0	4	2	11	27
20	Relief Flight	1	0	14	0	4	0	7	26
21	Security	1	1	6	3	5	0	9	25
22	Special Purpose	5	0	4	2	4	0	10	25
23	Tracking	8	0	2	0	2	0	12	24
24	Spraying	10	0	3	1	1	0	8	23
25	Aerobatics, Special Effects & Sport	3	0	0	7	1	0	7	18
26	Patrolling	2	1	5	0	1	0	7	16
27	Deterring	6	0	1	3	1	0	4	15
28	Advertising	6	1	0	4	2	0	1	14
29	Exploration	2	0	4	0	1	0	5	12
30	Sky Painting	4	0	0	0	1	0	0	5
31	Sky Writing	4	0	0	0	1	0	0	5
32	Water Bombing	2	0	0	0	0	1	2	5
33	Transport - Persons	0	0	2	2	0	0	0	4
<b>Total</b>		<b>480</b>	<b>32</b>	<b>214</b>	<b>178</b>	<b>276</b>	<b>11</b>	<b>578</b>	<b>1769</b>

In Alphabetical Order

FLIGHT MISSIONS - FUTURE	FLIGHT ZONES			Total
	Densely Populated (Only)	Sparsely Populated (Only)	Densely & Sparsely Populated	
1 Advertising	8	2	9	19
2 Aerobatics, Special Effects & Sport	5	2	16	23
3 Aerial Photography & Film/Video Footage	26	42	148	216
4 Broadcasting	7	5	40	52
5 Deterring	1	14	5	20
6 Dispensing	1	20	7	28
7 Exploration	2	9	1	12
8 Identification	5	18	33	56
9 Inspection	16	61	105	182
10 Localisation	6	41	51	98
11 Manipulation	1	16	15	32
12 Mapping	3	27	30	60
13 Measuring	9	42	47	98
14 Monitoring	12	42	77	131
15 Observation	10	22	67	99
16 Patrolling	1	5	9	15
17 Relief Flight	0	7	16	23
18 Search & Rescue	7	11	33	51
19 Security	1	8	17	26
20 Sensing	0	12	19	31
21 Sky Painting	5	0	0	5
22 Sky Writing	5	0	0	5
23 Special Purpose	0	14	10	24
24 Spotting	1	21	19	41
25 Spraying	1	17	9	27
26 Surveillance	1	9	24	34
27 Surveying	8	39	74	121
28 Testing	4	25	53	82
29 Tracking	4	13	13	30
30 Transport - Goods	1	7	18	26
31 Transport - Persons	0	2	2	4
32 Validation	3	22	50	75
33 Water Bombing	0	3	4	7
<b>Total</b>	<b>154</b>	<b>578</b>	<b>1021</b>	<b>1753</b>

**In Decreasing Order of Importance Order**

FLIGHT MISSIONS - FUTURE		FLIGHT ZONES			Total
		Densely Populated (Only)	Sparsely Populated (Only)	Densely & Sparsely Populated	
1	Aerial Photography & Film/Video Footage	26	42	148	216
2	Inspection	16	61	105	182
3	Monitoring	12	42	77	131
4	Surveying	8	39	74	121
5	Observation	10	22	67	99
6	Localisation	6	41	51	98
7	Measuring	9	42	47	98
8	Testing	4	25	53	82
9	Validation	3	22	50	75
10	Mapping	3	27	30	60
11	Identification	5	18	33	56
12	Broadcasting	7	5	40	52
13	Search & Rescue	7	11	33	51
14	Spotting	1	21	19	41
15	Surveillance	1	9	24	34
16	Manipulation	1	16	15	32
17	Sensing	0	12	19	31
18	Tracking	4	13	13	30
19	Dispensing	1	20	7	28
20	Spraying	1	17	9	27
21	Security	1	8	17	26
22	Transport - Goods	1	7	18	26
23	Special Purpose	0	14	10	24
24	Aerobatics, Special Effects & Sport	5	2	16	23
25	Relief Flight	0	7	16	23
26	Deterring	1	14	5	20
27	Advertising	8	2	9	19
28	Patrolling	1	5	9	15
29	Exploration	2	9	1	12
30	Water Bombing	0	3	4	7
31	Sky Painting	5	0	0	5
32	Sky Writing	5	0	0	5
33	Transport - Persons	0	2	2	4
<b>Total</b>		<b>154</b>	<b>578</b>	<b>1021</b>	<b>1753</b>

## Comparison Current (C) - Near-Future (F)

In Alphabetical Order

MARKET SECTORS C = Current - F = Future			FLIGHT ENVELOPES							Total Current	Total Future
			VLOS	EVLOS	BVLOS	VLOS EVLOS	VLOS BVLOS	EVLOS BVLOS	VLOS EVLOS BVLOS		
1	Aerial Photography, Audio-Visual, Production, Advertising	C	140	3	3	27	14	1	18	206	146
		F	70	4	2	41	8	0	21		
2	Agriculture, Fishery, Fish Farming, Forestry	C	64	2	23	5	10	0	39	143	168
		F	44	1	14	14	22	0	73		
3	Aircraft System or Sub-system Production	C	23	0	2	2	6	2	22	57	36
		F	17	0	1	1	3	1	13		
4	Cinema & TV Industry	C	57	0	1	8	7	1	8	82	31
		F	18	0	0	5	3	0	5		
5	Construction & Real Estate	C	180	19	7	20	11	1	24	262	160
		F	63	2	8	23	39	0	25		
6	Entertainment, Artistic Expression & Sport	C	13	0	4	7	0	0	5	29	20
		F	3	0	1	2	6	0	8		
7	Environmental Protection & Wildlife Conservation	C	55	4	13	19	14	0	19	124	97
		F	22	0	15	14	20	3	23		
8	Flight Training / Instruction	C	40	1	7	4	18	0	38	108	174
		F	14	16	19	24	26	0	75		
9	Heritage Site & Historical Monument Management	C	17	0	1	0	5	1	2	26	60
		F	30	1	0	0	5	0	24		
10	Humanitarian Aid	C	10	0	6	1	0	0	7	24	43
		F	18	0	14	0	7	0	4		
11	Insurance (Accident & Claim Investigation)	C	2	0	0	7	0	0	0	9	34
		F	14	0	0	9	4	0	7		
12	Maintenance	C	125	6	11	29	27	0	33	231	199
		F	54	0	22	22	33	1	67		
13	Mining & Exploration	C	19	3	21	1	0	0	32	76	45
		F	9	0	12	0	4	0	20		
14	Miscellaneous - Air Show	C	2	0	0	0	0	0	0	2	2
		F	0	0	0	2	0	0	0		
15	Miscellaneous - Demonstration	C	6	0	1	1	1	0	4	13	9
		F	2	0	2	0	3	1	1		
16	Miscellaneous - Ferry/Positioning	C	0	0	1	0	0	0	0	1	0
		F	0	0	0	0	0	0	0		
17	News Gathering & Broadcasting	C	8	0	0	0	0	0	0	9	6
		F	2	0	0	0	2	0	2		
18	Policy Compliance & Obtaining Legal Proof	C	0	0	0	0	0	0	0	0	13
		F	5	0	0	2	0	0	6		
19	Public Services & Safety	C	48	0	18	8	22	0	36	132	84
		F	25	2	16	1	8	3	29		
20	Security & Law Enforcement	C	6	0	33	1	3	0	19	62	84
		F	18	3	41	0	3	0	19		
21	Remote Operations - Non-Sensing	C	0	0	2	0	0	0	2	4	9
		F	0	0	0	2	7	0	0		
22	Remote Operations - Sensing	C	9	2	7	3	3	2	1	27	26
		F	4	0	5	3	8	0	6		
23	Research & Science	C	91	0	25	19	57	0	69	261	237
		F	44	3	14	12	48	0	116		
24	Transport	C	0	0	14	4	5	0	0	23	44
		F	0	0	24	0	5	1	14		
25	Utility Companies (Public & Private)	C	26	0	5	2	0	5	2	40	43
		F	4	0	6	1	12	0	20		
<b>Total - Current</b>		<b>C</b>	<b>941</b>	<b>40</b>	<b>205</b>	<b>168</b>	<b>203</b>	<b>13</b>	<b>380</b>	<b>1950</b>	
<b>Total - Future</b>		<b>F</b>	<b>480</b>	<b>32</b>	<b>216</b>	<b>178</b>	<b>276</b>	<b>10</b>	<b>578</b>		<b>1770</b>

### Comparison Current (C) - Near-Future (F)

In Alphabetical Order

MARKET SECTORS C = Current - F = Future		FLIGHT ZONES			Total Current	Total Future
		Densely Populated (Only)	Sparsely Populated (Only)	Densely & Sparsely Populated		
1	Aerial Photography, Audio-Visual, Production, Advertising	C	20	90	136	
		F	39	11	115	165
2	Agriculture, Fishery, Fish Farming, Forestry	C	7	107	9	123
		F	9	124	28	161
3	Aircraft System or Sub-system Production	C	10	37	11	58
		F	2	19	19	40
4	Cinema & TV Industry	C	9	27	48	84
		F	7	5	20	32
5	Construction & Real Estate	C	48	91	116	255
		F	21	44	83	148
6	Entertainment, Artistic Expression & Sport	C	1	15	12	28
		F	2	4	14	20
7	Environmental Protection & Wildlife Conservation	C	2	81	32	115
		F	10	38	56	104
8	Flight Training / Instruction	C	6	23	74	103
		F	15	56	106	177
9	Heritage Site & Historical Monument Management	C	0	3	22	25
		F	6	9	49	64
10	Humanitarian Aid	C	0	7	19	26
		F	0	20	21	41
11	Insurance (Accident & Claim Investigation)	C	6	3	0	9
		F	0	0	34	34
12	Maintenance	C	27	98	108	233
		F	9	51	130	190
13	Mining & Exploration	C	0	48	25	73
		F	6	29	8	43
14	Miscellaneous - Air Show	C	0	2	0	2
		F	0	0	2	2
15	Miscellaneous - Demonstration	C	0	7	5	12
		F	1	2	5	8
16	Miscellaneous - Ferry/Positioning	C	0	1	0	1
		F	0	0	0	0
17	News Gathering & Broadcasting	C	0	3	4	7
		F	0	0	6	6
18	Policy Compliance & Obtaining Legal Proof	C	0	0	0	0
		F	3	0	9	12
19	Public Services & Safety	C	8	33	82	123
		F	12	19	59	90
20	Remote Operations - Non-Sensing	C	11	12	46	69
		F	8	17	53	78
21	Remote Operations - Sensing	C	0	2	2	4
		F	1	3	3	7
22	Research & Science	C	2	17	7	26
		F	0	8	14	22
23	Security & Law Enforcement	C	7	149	97	253
		F	1	95	128	224
24	Transport	C	1	6	13	20
		F	1	6	30	37
25	Utility Companies (Public & Private)	C	6	10	24	40
		F	0	16	28	44
<b>Total</b>		<b>C</b>	<b>171</b>	<b>872</b>	<b>892</b>	<b>1935</b>
<b>Total</b>		<b>F</b>				<b>1749</b>

## Comparison Current (C) - Near-Future (F) In Alphabetical Order

FLIGHT MISSIONS C = Current - F = Future			FLIGHT ENVELOPES						Total Current	Total Future		
			VLOS	EVLOS	BVLOS	VLOS EVLOS	VLOS BVLOS	EVLOS BVLOS			VLOS EVLOS BVLOS	
1	Advertising	C	13	0	0	4	2	0	2	21		
		F	6	1	0	4	2	0	1		14	
2	Aerobatics, Special Effects & Sport	C	20	0	0	7	0	0	5	32		
		F	3	0	0	7	1	0	7		18	
3	Aerial Photography & Film/Video Footage	C	189	6	4	24	17	0	42	282		
		F	105	7	7	38	22	1	44		224	
4	Broadcasting	C	49	1	1	4	3	0	9	67		
		F	18	1	0	13	2	0	10		44	
5	Deterring	C	6	0	0	2	0	0	2	10		
		F	6	0	1	3	1	0	4		15	
6	Dispensing	C	15	0	4	3	3	0	5	30		
		F	16	1	2	3	2	0	8		32	
7	Exploration	C	4	0	3	0	2	0	5	14		
		F	2	0	4	0	1	0	5		12	
8	Identification	C	18	0	9	3	5	0	10	45		
		F	12	2	8	6	9	0	21		58	
9	Inspection	C	128	5	18	23	19	1	37	231		
		F	53	2	20	23	30	2	61		191	
10	Localisation	C	55	2	12	6	12	2	21	110		
		F	22	2	14	8	20	0	40		106	
11	Manipulation	C	17	4	2	3	1	1	8	36		
		F	10	0	6	2	5	0	9		32	
12	Mapping	C	20	0	8	2	5	1	25	61		
		F	12	0	5	6	12	0	27		62	
13	Measuring	C	59	5	5	9	12	0	16	106		
		F	27	1	7	9	21	0	35		100	
14	Monitoring	C	74	4	12	20	12	1	17	140		
		F	35	1	19	14	24	0	41		134	
15	Observation	C	44	2	13	13	13	1	19	105		
		F	24	3	13	10	16	0	28		94	
16	Patrolling	C	6	0	10	0	2	0	6	24		
		F	2	1	5	0	1	0	7		16	
17	Relief Flight	C	18	0	42	0	10	0	23	93		
		F	1	0	14	0	4	0	7		26	
18	Search & Rescue	C	14	0	6	2	8	0	10	40		
		F	10	5	7	1	9	1	16		49	
19	Security	C	1	1	6	0	3	0	11	22		
		F	1	1	6	3	5	0	9		25	
20	Sensing	C	13	0	7	4	5	1	7	37		
		F	5	1	9	0	6	0	12		33	
21	Sky Painting	C	2	0	0	0	0	0	0	2		
		F	4	0	0	0	1	0	0		5	
22	Sky Writing	C	3	0	0	0	0	0	0	3		
		F	4	0	0	0	1	0	0		5	
23	Special Purpose	C	4	0	6	4	0	0	1	15		
		F	5	0	4	2	4	0	10		25	
24	Spotting	C	16	2	14	2	10	0	16	60		
		F	6	1	7	3	7	0	18		42	
25	Spraying	C	6	0	0	1	0	0	0	7		
		F	10	0	3	1	1	0	8		23	
26	Surveillance	C	13	0	7	1	9	1	11	42		
		F	5	0	6	0	4	0	18		33	
27	Surveying	C	68	6	17	14	14	0	27	146		
		F	36	1	13	10	22	2	45		129	
28	Testing	C	38	1	9	9	18	2	30	107		
		F	15	0	10	3	21	1	34		84	
29	Tracking	C	24	0	3	0	9	1	16	53		
		F	8	0	2	0	2	0	12		24	
30	Transport - Goods	C	2	0	11	4	2	0	2	21		
		F	0	0	10	0	4	2	11		27	
31	Transport - Persons	C	1	0	1	0	0	0	1	3		
		F	0	0	2	2	0	0	0		4	
32	Validation	C	19	1	5	4	12	1	13	55		
		F	15	1	10	7	16	1	28		78	
33	Water Bombing	C	0	0	0	0	0	0	1	1		
		F	2	0	0	0	0	1	2		5	
<b>Total Current</b>			<b>C</b>	<b>959</b>	<b>40</b>	<b>235</b>	<b>168</b>	<b>208</b>	<b>13</b>	<b>398</b>	<b>2021</b>	
<b>Total Future</b>			<b>F</b>	<b>480</b>	<b>32</b>	<b>214</b>	<b>178</b>	<b>276</b>	<b>11</b>	<b>578</b>		<b>1769</b>

## Comparison Current (C) - Near-Future (F) In Alphabetical Order

FLIGHT MISSIONS C = Current - F = Future		FLIGHT ZONES			Total Current	Total Future	
		Densesely Populated	Sparsely Populated	Densely & Sparsely Populated			
1	Advertising	C	3	14	8	25	
		F	8	2	9		19
2	Aerobatics, Special Effects & Sport	C	1	18	15	34	
		F	5	2	16		23
3	Aerial Photography & Film/Video Footage	C	32	95	164	291	
		F	26	42	148		216
4	Broadcasting	C	5	21	54	80	
		F	7	5	40		52
5	Deterring	C	0	6	5	11	
		F	1	14	5		20
6	Dispensing	C	1	20	6	27	
		F	1	20	7		28
7	Exploration	C	0	11	4	15	
		F	2	9	1		12
8	Identification	C	10	23	29	62	
		F	5	18	33		56
9	Inspection	C	22	87	102	211	
		F	16	61	105		182
10	Localisation	C	7	60	41	108	
		F	6	41	51		98
11	Manipulation	C	1	20	8	29	
		F	1	16	15		32
12	Mapping	C	1	33	20	54	
		F	3	27	30		60
13	Measuring	C	12	43	47	102	
		F	9	42	47		98
14	Monitoring	C	12	43	47	102	
		F	12	42	77		131
15	Observation	C	13	43	60	116	
		F	10	22	67		99
16	Patrolling	C	2	17	7	26	
		F	1	5	9		15
17	Relief Flight	C	0	7	12	19	
		F	0	7	16		23
18	Search & Rescue	C	5	18	21	44	
		F	7	11	33		51
19	Security	C	2	9	17	28	
		F	1	8	17		26
20	Sensing	C	1	14	19	34	
		F	0	12	19		31
21	Sky Painting	C	0	3	0	3	
		F	5	0	0		5
22	Sky Writing	C	0	4	0	4	
		F	5	0	0		5
23	Special Purpose	C	0	13	4	17	
		F	0	14	10		24
24	Spotting	C	3	28	22	53	
		F	1	21	19		41
25	Spraying	C	0	6	1	7	
		F	1	17	9		27
26	Surveillance	C	4	22	16	42	
		F	1	9	24		34
27	Surveying	C	13	61	62	136	
		F	8	39	74		121
28	Testing	C	5	60	34	99	
		F	4	25	53		82
29	Tracking	C	5	14	9	28	
		F	4	13	13		30
30	Transport - Goods	C	1	5	16	22	
		F	1	7	18		26
31	Transport - Persons	C	0	2	3	5	
		F	0	2	2		4
32	Validation	C	8	40	27	75	
		F	3	22	50		75
33	Water Bombing	C	0	0	1	1	
		F	0	3	4		7
<b>Total Current</b>		<b>C</b>	<b>171</b>	<b>872</b>	<b>892</b>	<b>1935</b>	
<b>Total Future</b>		<b>F</b>	<b>154</b>	<b>578</b>	<b>1021</b>		<b>1753</b>

		Yes	No	Qty
1	Have you heard of the SORA guidelines?	203	48	
2	Do you know what the SORA guidelines are?	172	79	
3	Have you got an electronic copy of the SORA guidelines?	113	138	
4	Have you read the SORA guidelines?	132	119	
5	In what language did you read the SORA guidelines?	100	32	
	English			100
	In your national language			32
6	Do you master English well enough to fully comprehend the SORA guidelines & apply them?	47	6	
7	How did you obtain the SORA guidelines?			
	JARUS website			5
	EASA website			29
	My national aviation authority (NAA)			19
	My NAA & EASA website			4
	EASA website & JARUS website			3
	EASA website & Another source			3
	Another source			99
	Not applicable			6
8	Has your NAA translated the SORA guidelines into your national language?	92	155	
9	Is your NAA translating the SORA guidelines into your national language?	81	72	
10	Do you master the SORA terminology?	122	125	
11	Do you understand the SORA methodology?	157	89	
12	Do you currently use the SORA guidelines for the safety risk assessment of your operations?	87	161	
13	Have you submitted a SORA to your NAA?	58	190	
14	If you do not use SORA, how do you currently carry out the safety risk assessment?			
	Process approved by my NAA			123
	Use of a National Standard Scenario (STS)			26
	Use of a Predefined Risk Assessment (PDRA)			15
	By other means			57
15	Do you use an independent competent third party to conduct your safety risk assessment?	36	214	
16	Would an online tool guiding you through the establishment of SORA be of interest?	229	21	
17	Regarding the language of the online SORA tool			
	English is acceptable			72
	National language is preferred			138
18	What type of independent competent party do you use to conduct your safety risk assessment?			
	Qualified Entity			9
	Qualified Entity, Notified Body (e.g. Bureau Veritas, RINA, TUV)			1
	Qualified Entity, NAA approved organisation			1
	Qualified Entity, Consultant (not NAA-approved)			2
	NAA-approved organisation			10
	Consultant (not NAA-approved)			9
	Other			3

**The Respondents**

(Qualified to contribute in function of responses supplied in the UAS OPS survey)

1	Goldy Aviarions	Belgium
2	DeltaCopter SRL	Belgium
3	UAS Consulting	Belgium
4	Sky Fun	Bulgaria
5	Unmanned Systems Bulgaria	Bulgaria
6	Dronotique	France
7	Kopter-Profi GmbH	Germany
8	Aerodrone (Ireland)	Ireland
9	Skyline	Italy
10	Operator X	Italy
11	Flyover di Vania Di Francesco	Italy
12	ANWB Medical Air Assistance	Netherlands
13	NLR	Netherlands
14	Drone Class	Netherlands
15	CNBOP-PIB	Poland
16	Civil Aviation Authority	Poland
17	Zangano	Spain
18	Nordluft	Sweden
19	Fotokite	Switzerland
20	Tethered Drone Systems Ltd	UK

**Types of Contributing Operators**

Corporate Entity - Drone Manufacturer & Operator	25%
Corporate Entity - Drone Operator	35%
Corporate Entity - Flight School	15%
Corporate Entity - Research	15%
Governmental Entity - Drone Operator	10%

**Types of Operations**

Corporate	75%
Non-Corporate	25%

		Yes	No
1	Does your organisation have a LUC?	20%	80%
2	Does your organisation plan to apply for a LUC?	75%	25%
3	Your company & its employees are conversant in English?	85%	15%
4	Do you know what is meant by the indicated terms?	85%	15%
5	Are you aware of the requirements in your country applicable to:		
	Security	85%	15%
	Privacy & data protection	100%	
	Environmental protection	95%	5%
	Use of radio frequency spectrum	85%	15%
6	Have you ever drawn up a ConOps?	55%	45%
7	Are you using a national standard scenario?	55%	45%
8	Are you using an EU standard scenario (STS)?	10%	90%
9	Are you using a Predefined Risk Assessment (PDRA)?	25%	75%
10	Have you already conducted a SORA?	55%	45%
11	Are you capable of conducting a SORA for each of your flight missions?	70%	30%
12	Regarding the Ground Risk Class (GRC), do you know the strategies to be followed in view of the following:		
	Strategic mitigations for ground risk	75%	25%
	Effects of ground impact are reduced	75%	25%
	An Emergency Response Plan (ERP) is in place, operated, validated & effective	75%	25%
13	Regarding the Ground Risk Class (GRC) mitigation:		
	Is it clear to you when the applied strategic mitigations are sufficient to lower the initial ARC?	70%	30%
	How do you quantify strategic mitigations?	65%	35%
	Do you know what "Atypical Airspace" is?	70%	30%
	Do you know at what distance from an airport/heliport a flight operation is NOT considered to be taking place in an airport/heliport environment?	100%	
14	Regarding the Air Risk Class (ARC) - 1:		
	Do you know how to calculate the kinetic energy?	70%	30%
	Do you know what to do of the calculated kinetic energy does not match with the characteristic dimensions of your drone in the GRC table?	70%	30%
	Do you know what a "Controlled Ground Area" is?	90%	10%
	Do you know what "Active Participants" are?	90%	10%
15	Regarding the Air Risk Class (ARC) - 2:		
	Is it clear to you when the applied strategic mitigations are sufficient to lower the initial ARC?	70%	30%
	Do you know how to quantify strategic mitigations?	65%	35%
	Do you know what "Atypical Airspace" is?	70%	30%
	Do you know at what distance from an airport/heliport a flight operation is NOT considered to be taking place in an airport/heliport environment?	100%	
16	Regarding the Air Risk Class (ARC) mitigation measures:		
	Do you master the standards of RTCA SC-228?	15%	85%
	Do you master the standards of EUROCAE WG-105?	15%	85%
	Do you master the standards of ASD-STAN?	10%	90%

		Qty	Yes	No
17	Are you capable of determining if a flight operation is taking place in an "urban area"?		85%	15%
18	How do you detect other aircraft in the operational airspace volume?			
	ADS-B	45%		
	FLARM	10%		
	Transponder	15%		
	4G/5G-based solution	20%		
	Web-based tracking system	40%		
	Other	35%		
19	Can you detect all other air traffic in uncontrolled airspace?		20%	80%
20	Do you understand the requirements that are applicable to the adjacent area/airspace?		80%	20%
21	Is drone incident reporting a legal obligation in your country?		85%	15%
22	If drone incident reporting is not a legal obligation, do you still report drone incidents?		80%	20%
23	What kind of third parties do you currently use when required by the OSO?			
	National Aviation Authority (NAA)	75%		
	Consultancy / training / airworthiness organisation (approved by NAA)	20%		
	Consultancy / training / airworthiness organisation (not approved by NAA)	5%		
	None	20%		
24	Are there entities in your country (besides your NAA) allowed to authorise drone operations based on SORA?		25%	75%
25	Are the following entities allowed to authorise drone operations based on SORA:			
	Qualified Entity - Training	40%		
	Qualified Entity - Airworthiness determination	30%		
	Qualified Entity - Operational procedure/manual	45%		
	Conformity Assessment Body - Training	0		
	Conformity Assessment Body - Airworthiness determination	5%		
	Conformity Assessment Body - Operational procedure/manual	5%		
	Notified Body - Training	5%		
	Notified Body - Airworthiness determination	15%		
	Notified Body - Operational procedure/manual	15%		
	U-Space/UTM service provider - Training	5%		
	U-Space/UTM service provider - Airworthiness determination	10%		
	U-Space/UTM service provider - Procedure/manual	15%		

		Qty	Yes	No
26	If you use SORA, from which organisation do you use standards to demonstrate compliance?			
	ANSI, USA	5%		
	ASD-STAN, Europe	15%		
	ASTM, USA	0		
	CEN, Europe	10%		
	ETSI, Europe	5%		
	EUROCAE, Europe	25%		
	EUROCONTROL, Europe	20%		
	ICAO, International	20%		
	ISO, International	10%		
	RTCA, USA	5%		
	SAE, USA	0		
	Other	40%		
27	If you currently use SORA, have you experienced difficulties in showing compliance with the required safety objectives due to the lack of standards/guidance material etc.?		40%	60%
28	If you have experienced difficulties in showing compliance with the required safety objectives, indicate where you face these difficulties.			
	Operational safety objective (OSO)	100%		
	Strategic mitigations	88%		
	Technical information on your drone to be obtained from the drone manufacturer	88%		
29	If you use SORA, to which SAIL level are your operations associated?			
	SAIL 1	20%		
	SAIL 2	40%		
	SAIL 3	25%		
	SAIL 4	15%		
	SAIL 5	5%		
	SAIL 6	5%		
	SAIL 7	5%		
	Do not know	55%		
30	Up to which SAIL level can you currently demonstrate compliance?			
	SAIL 1	15%		
	SAIL 2	35%		
	SAIL 3	20%		
	SAIL 4	20%		
	SAIL 5	10%		
	SAIL 6	5%		
	SAIL 7	5%		
	Not certain	45%		

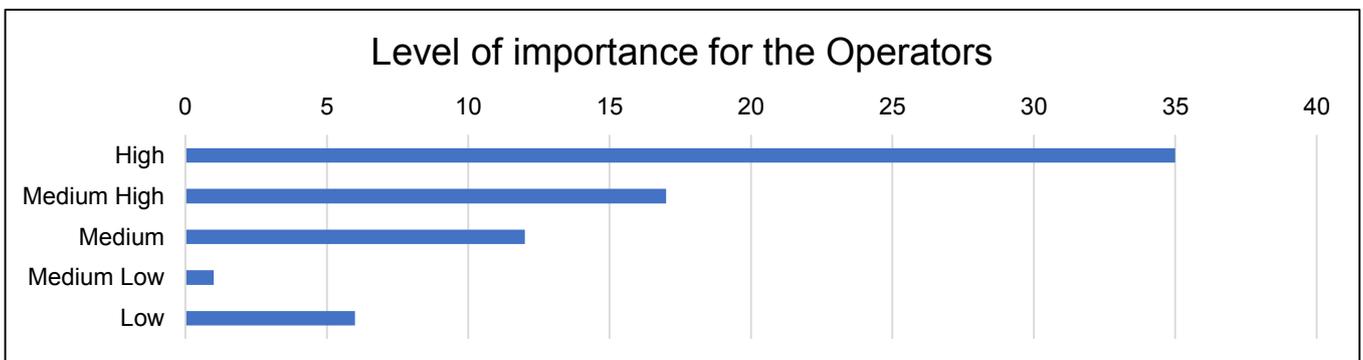
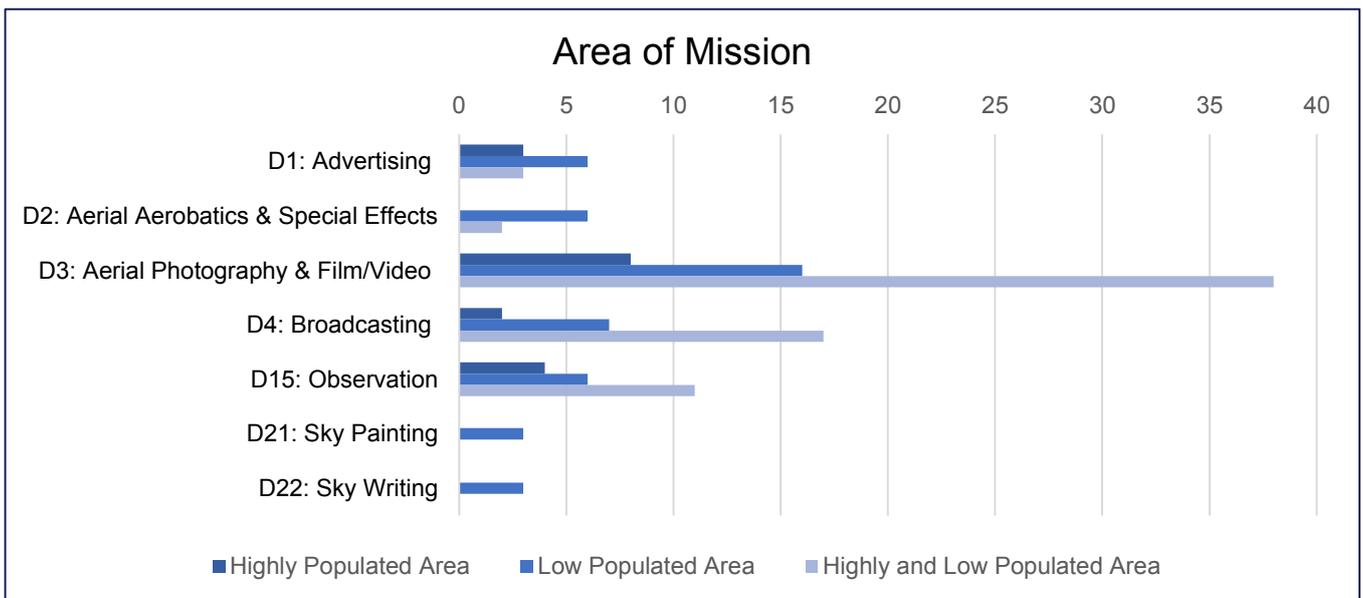
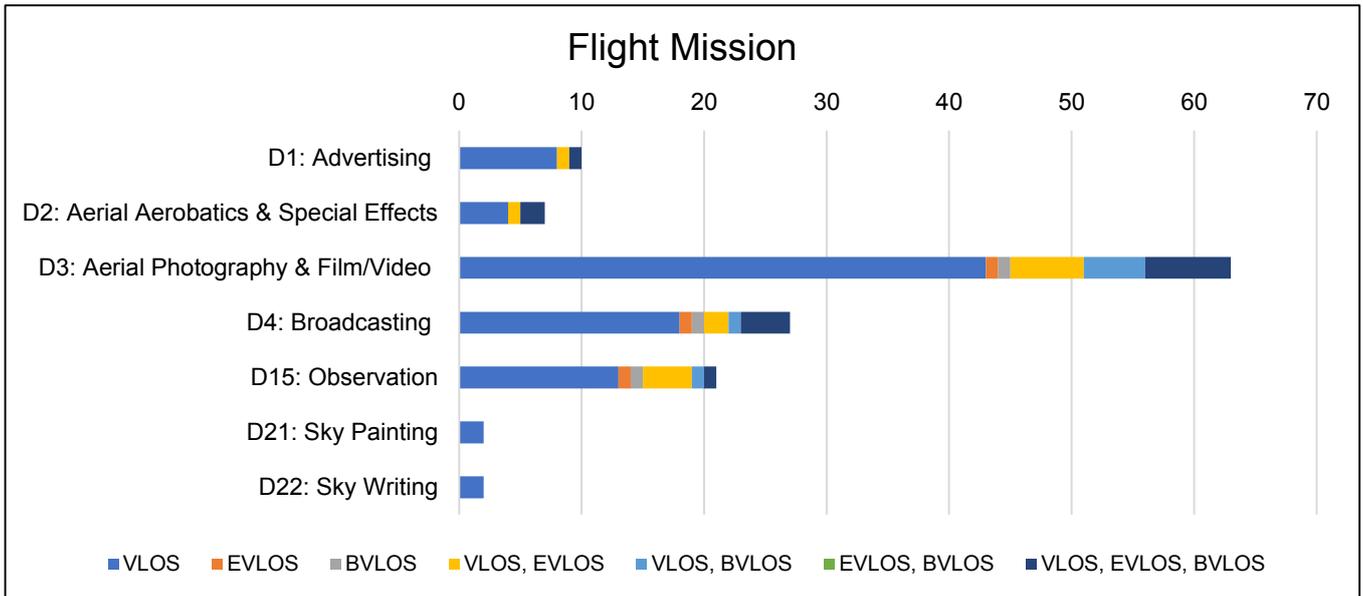
**ANNEX**

**PART 1 – UAS OPS**

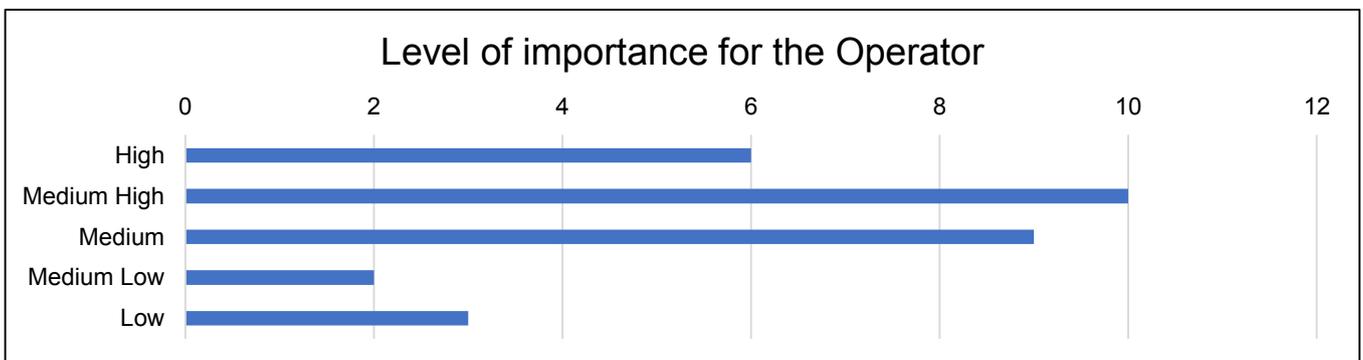
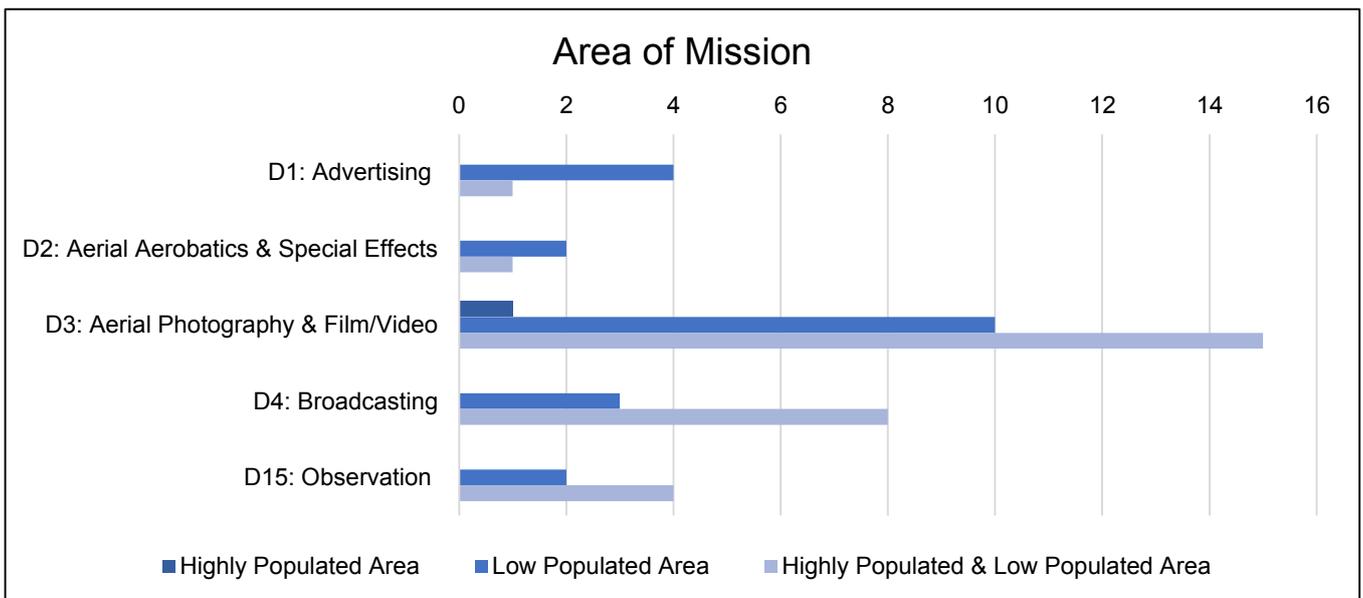
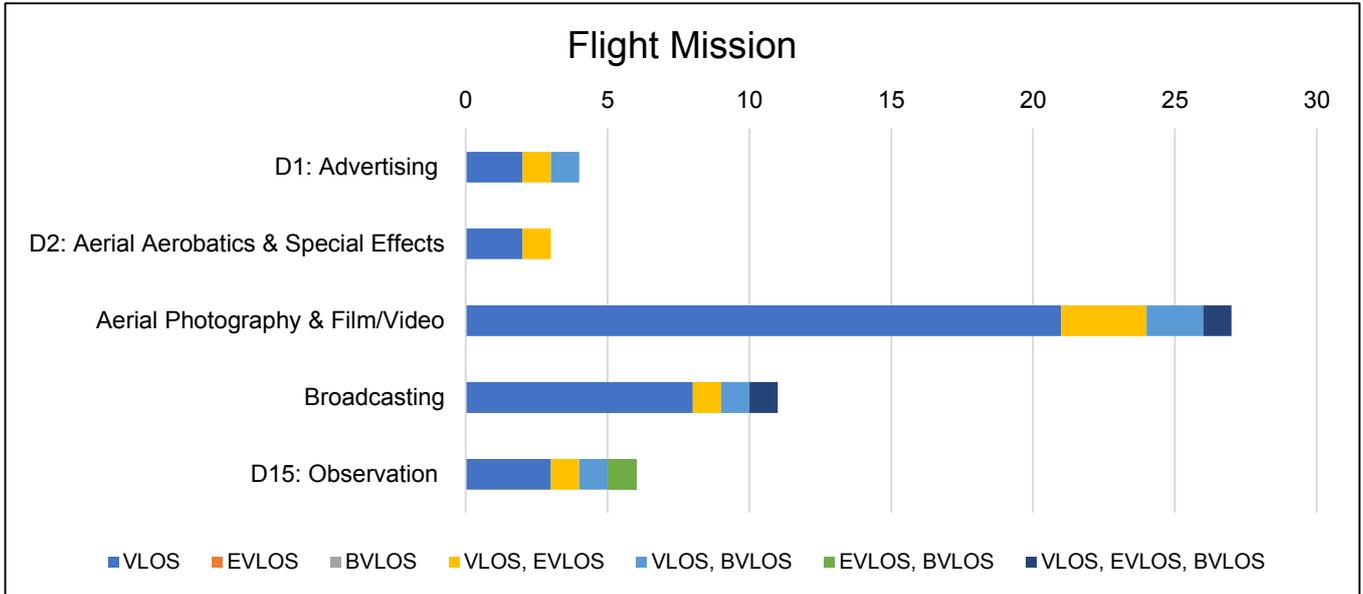
**SECTION 1**

**CURRENT SITUATION**

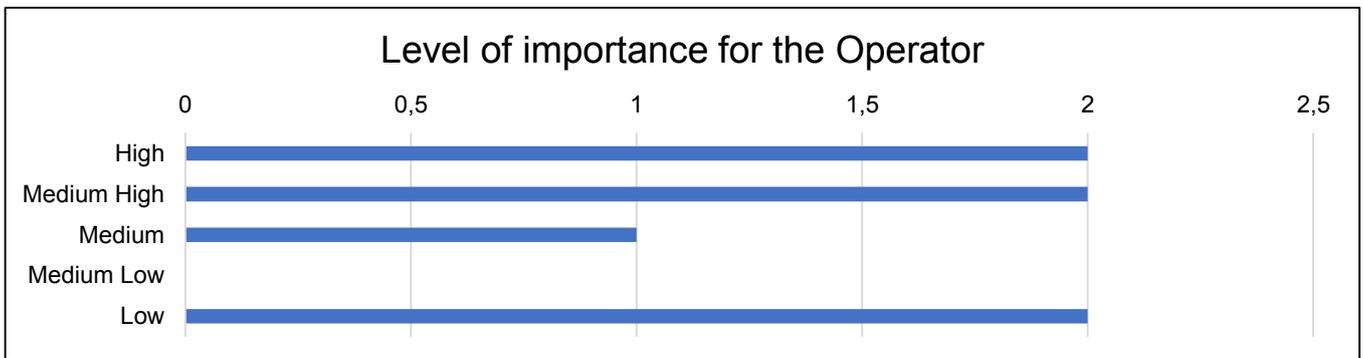
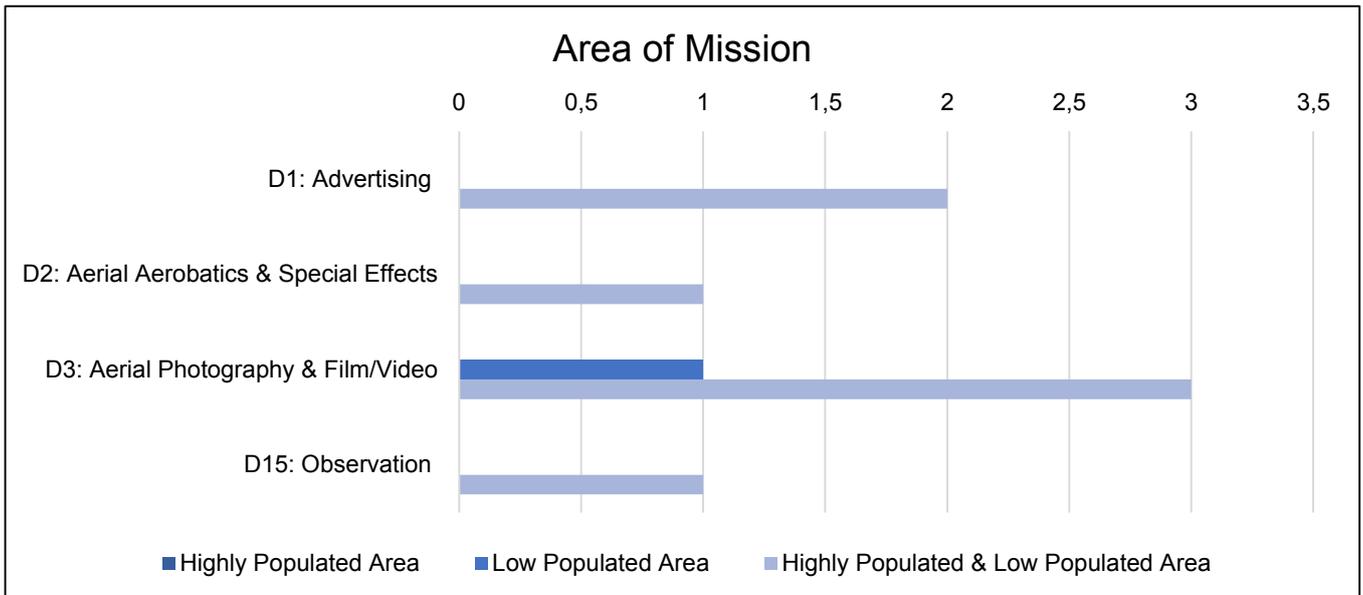
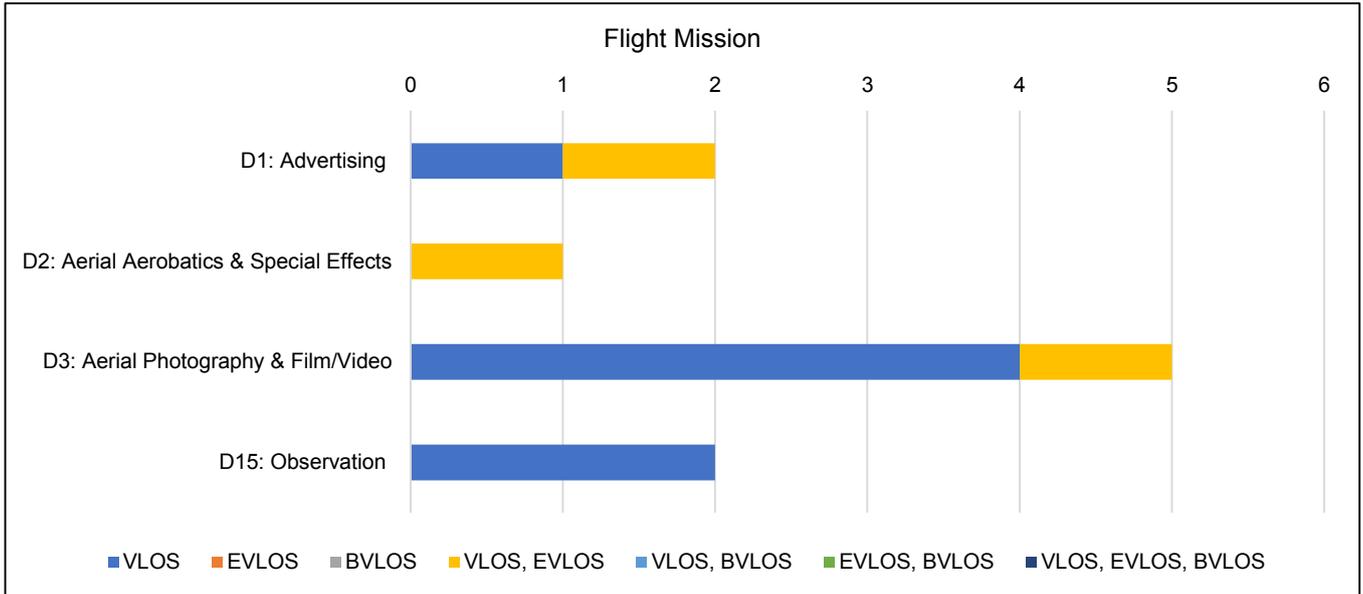
**DETAILED RESULTS**



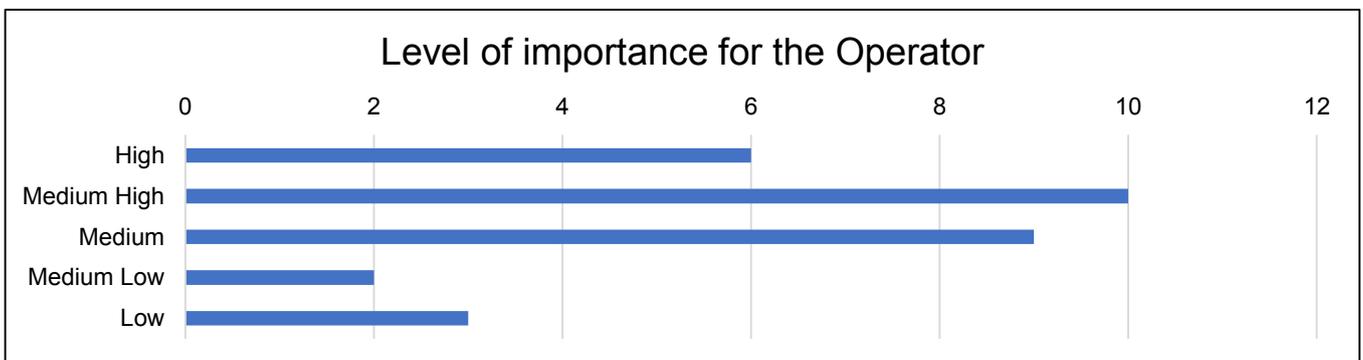
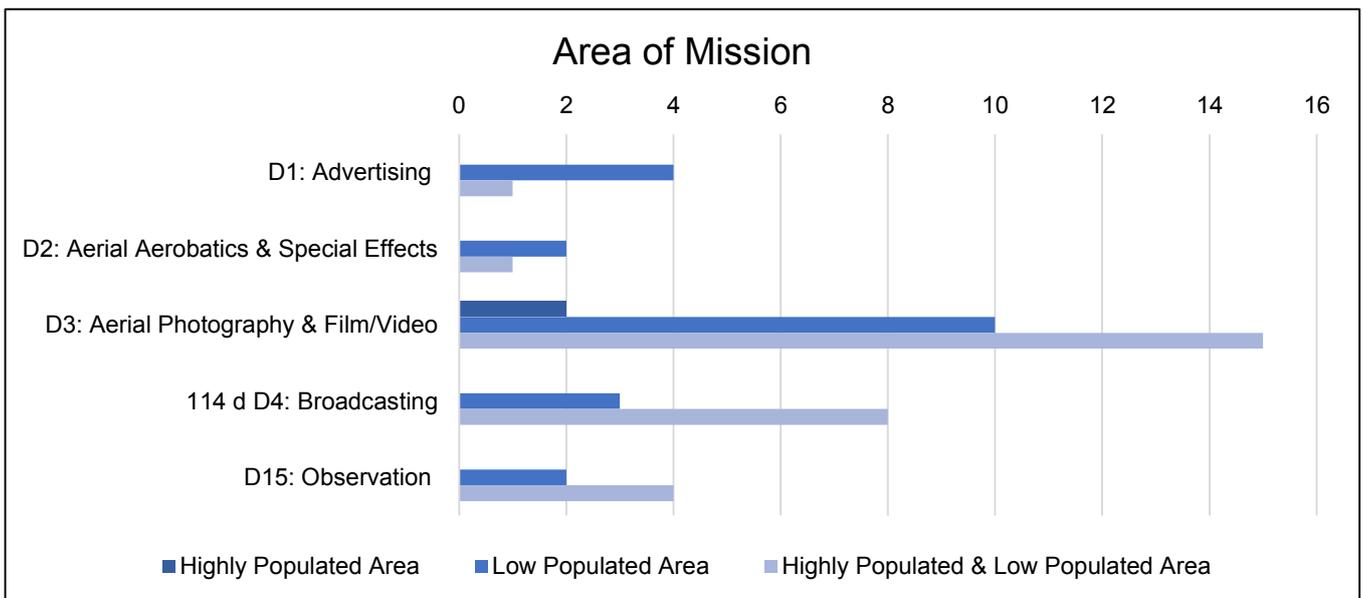
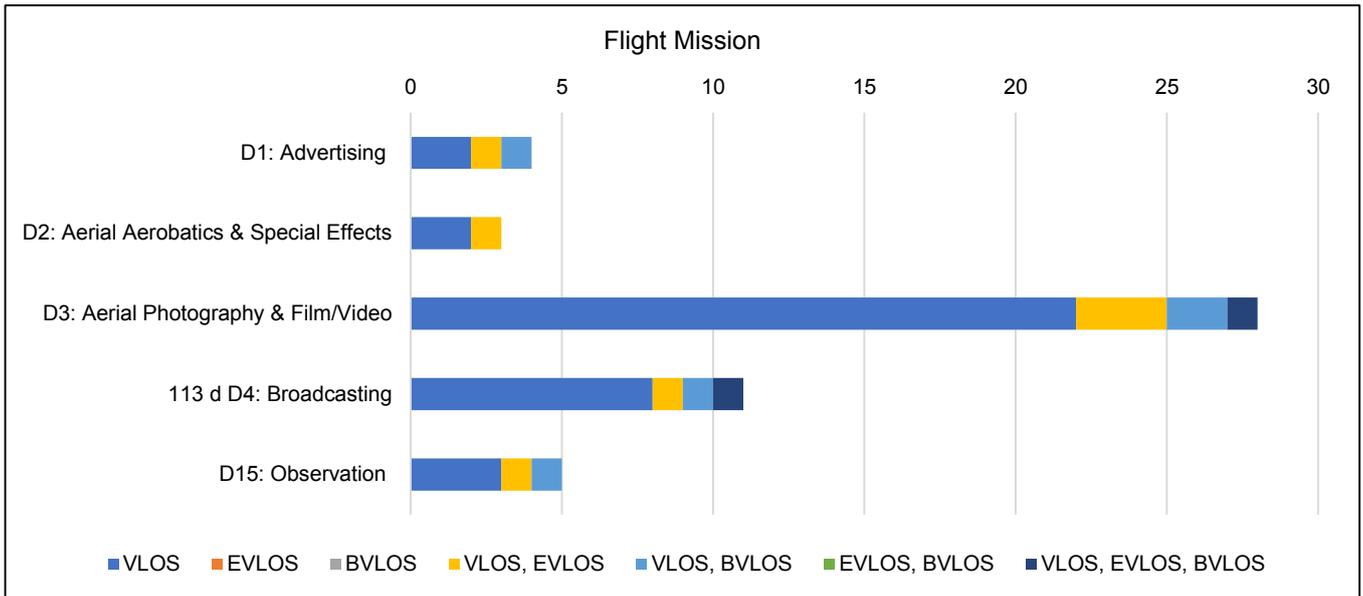
## Survey on Drone Operations & Safety Risk Analysis Methods



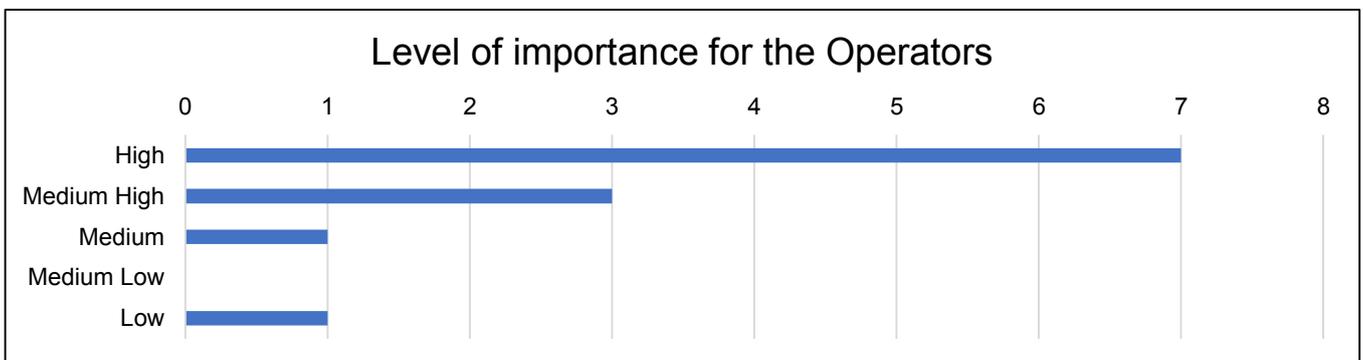
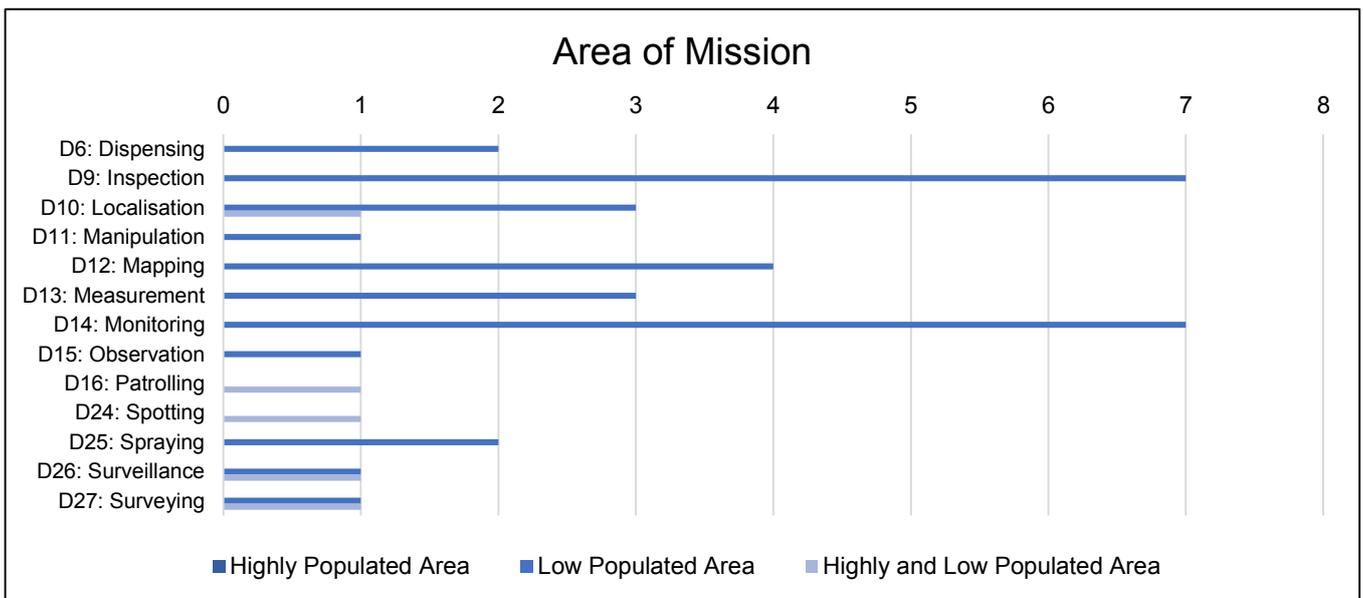
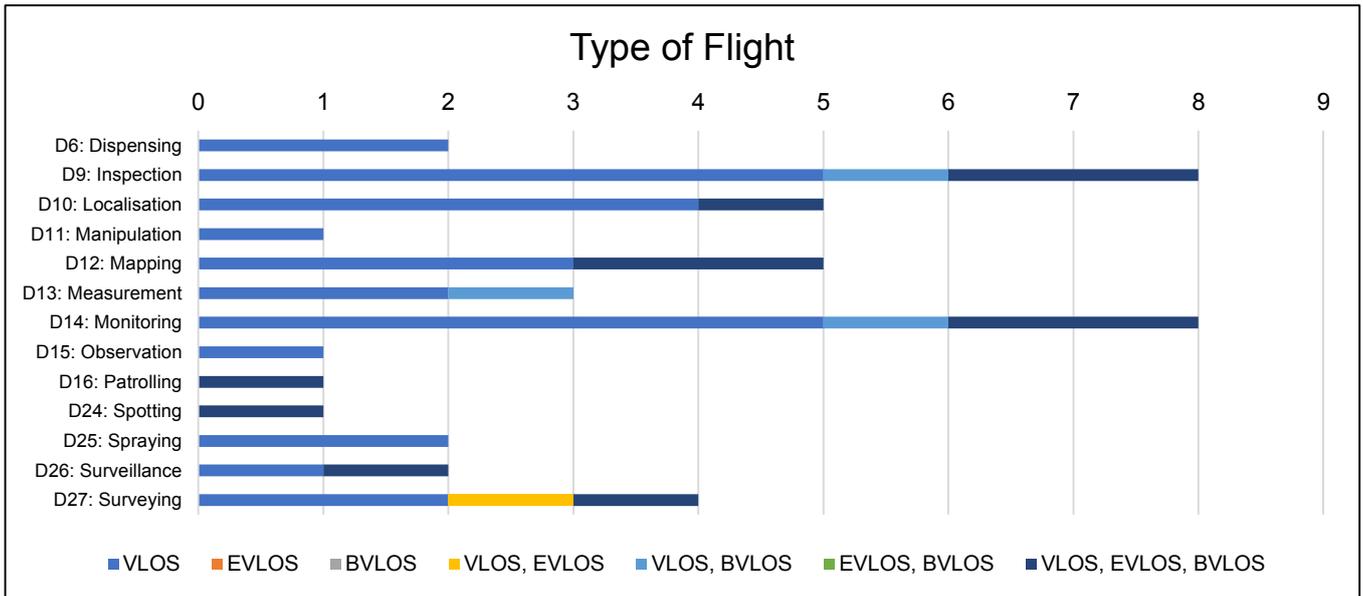
## Survey on Drone Operations & Safety Risk Analysis Methods



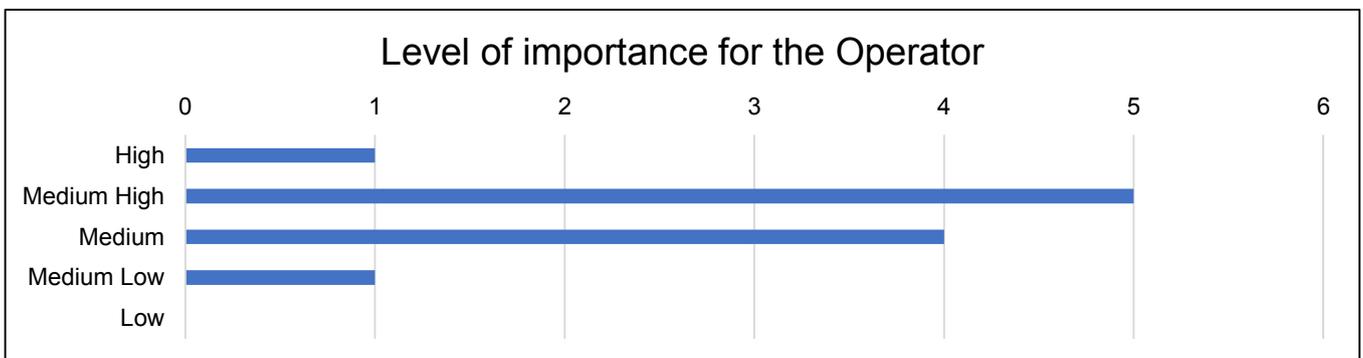
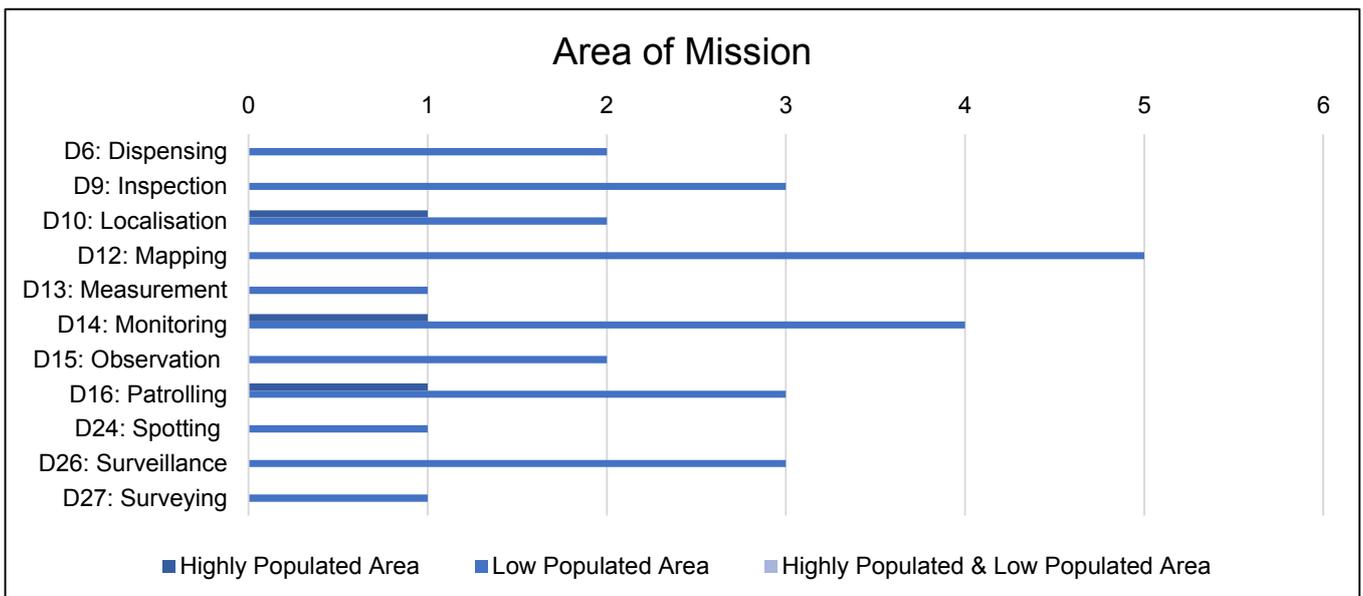
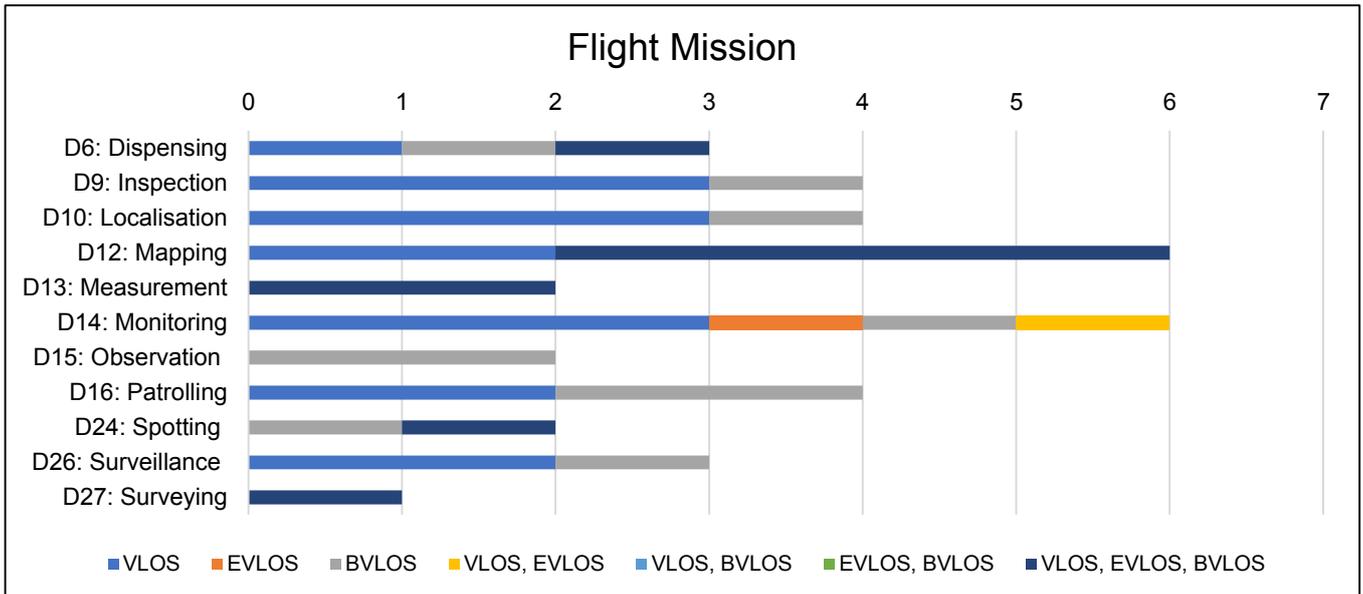
## Survey on Drone Operations & Safety Risk Analysis Methods



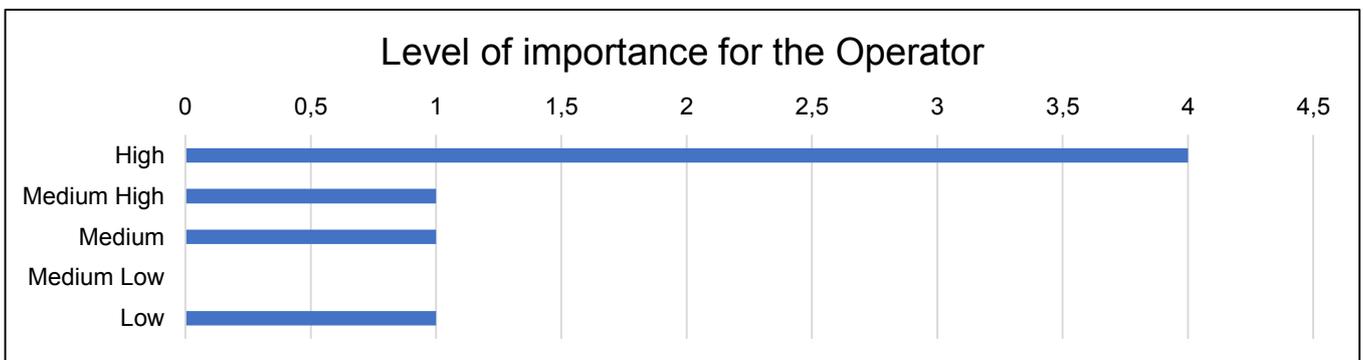
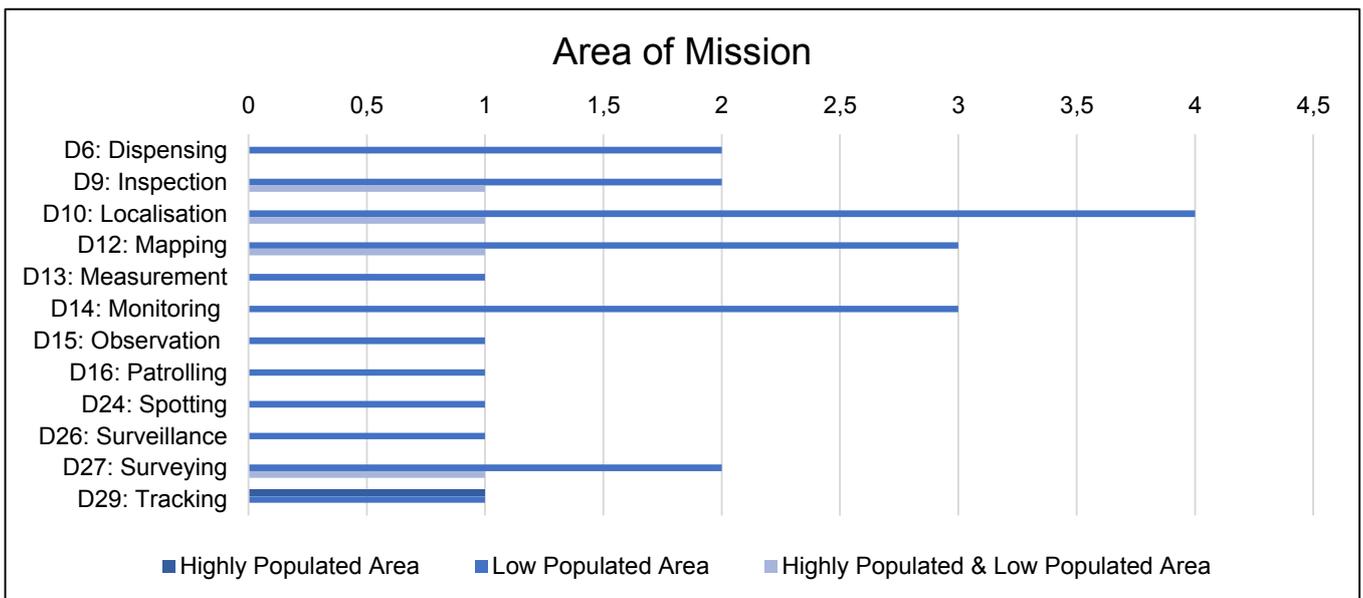
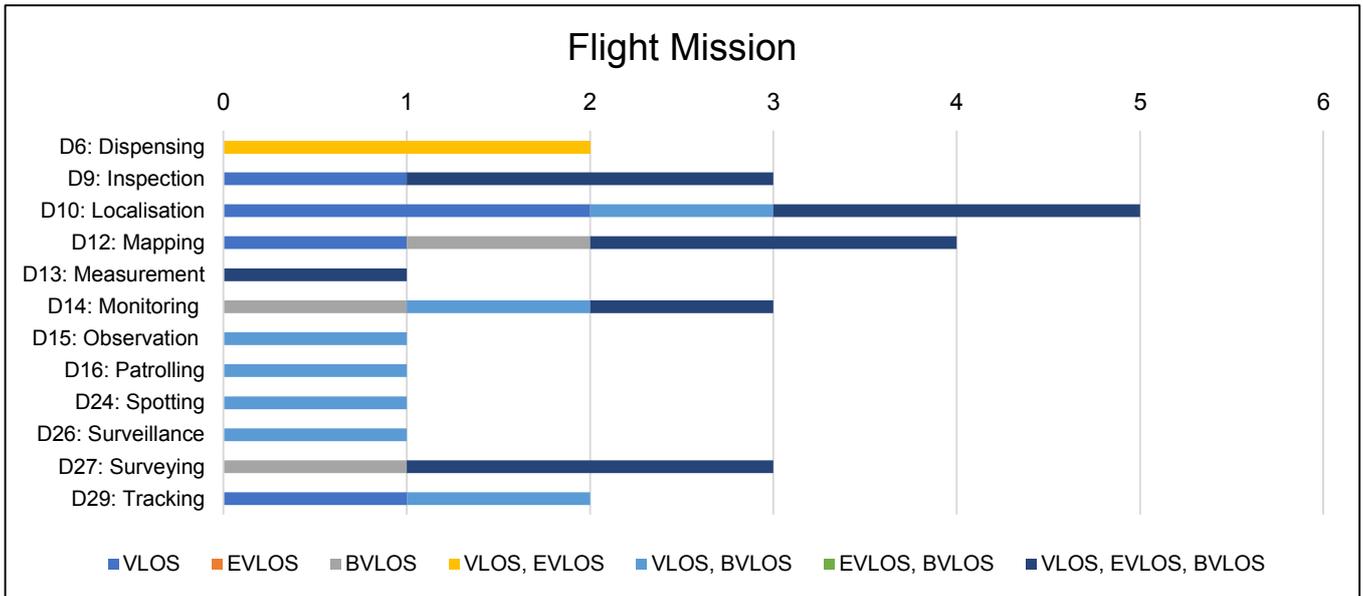
## Survey on Drone Operations & Safety Risk Analysis Methods



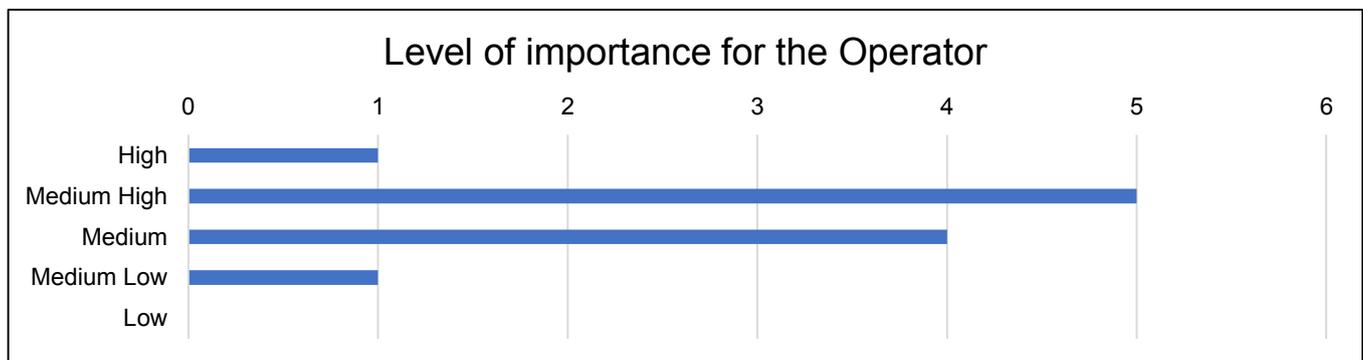
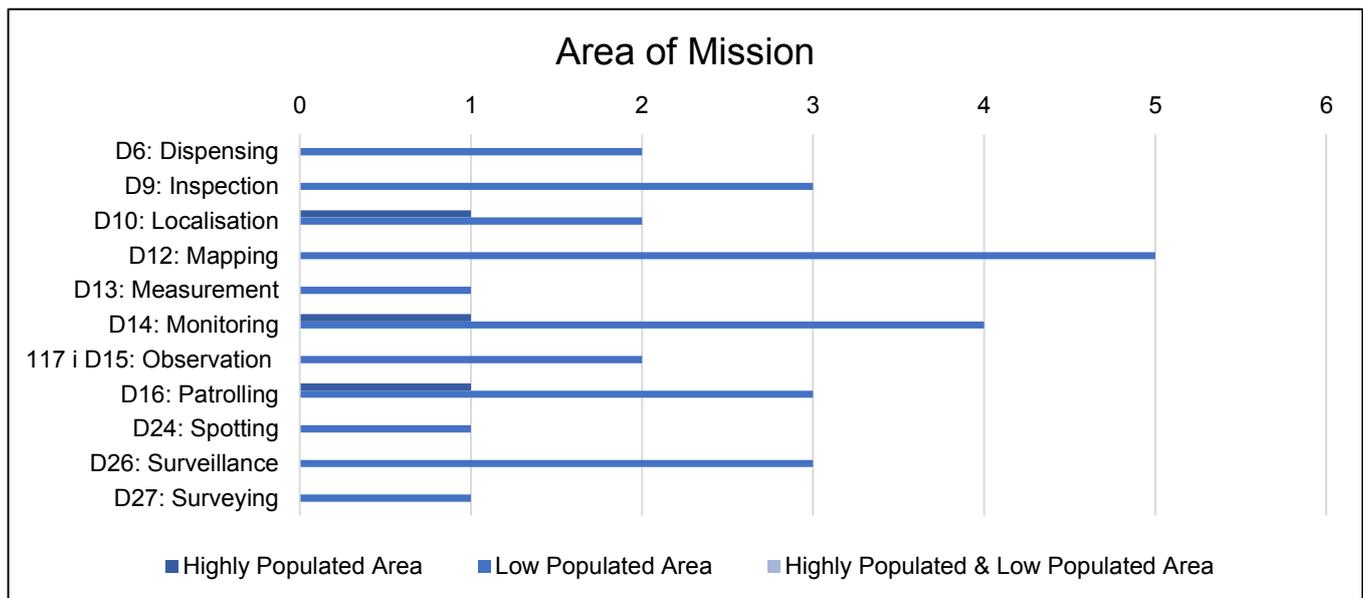
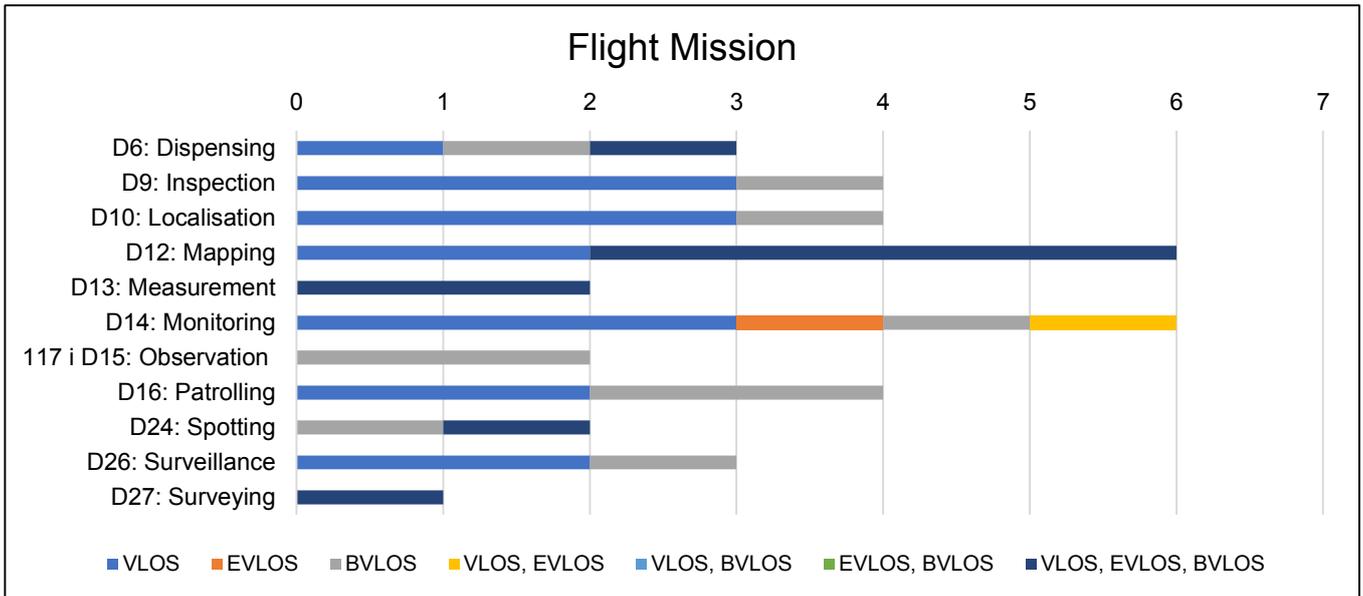
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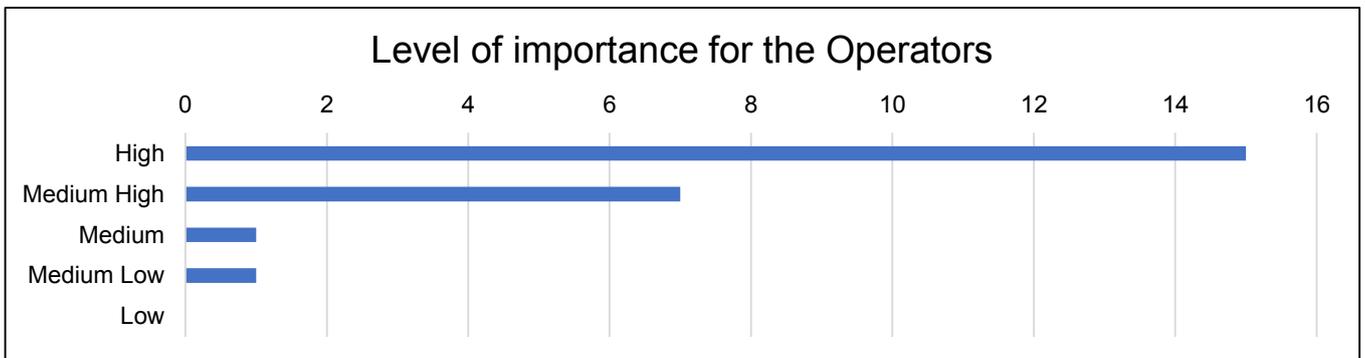
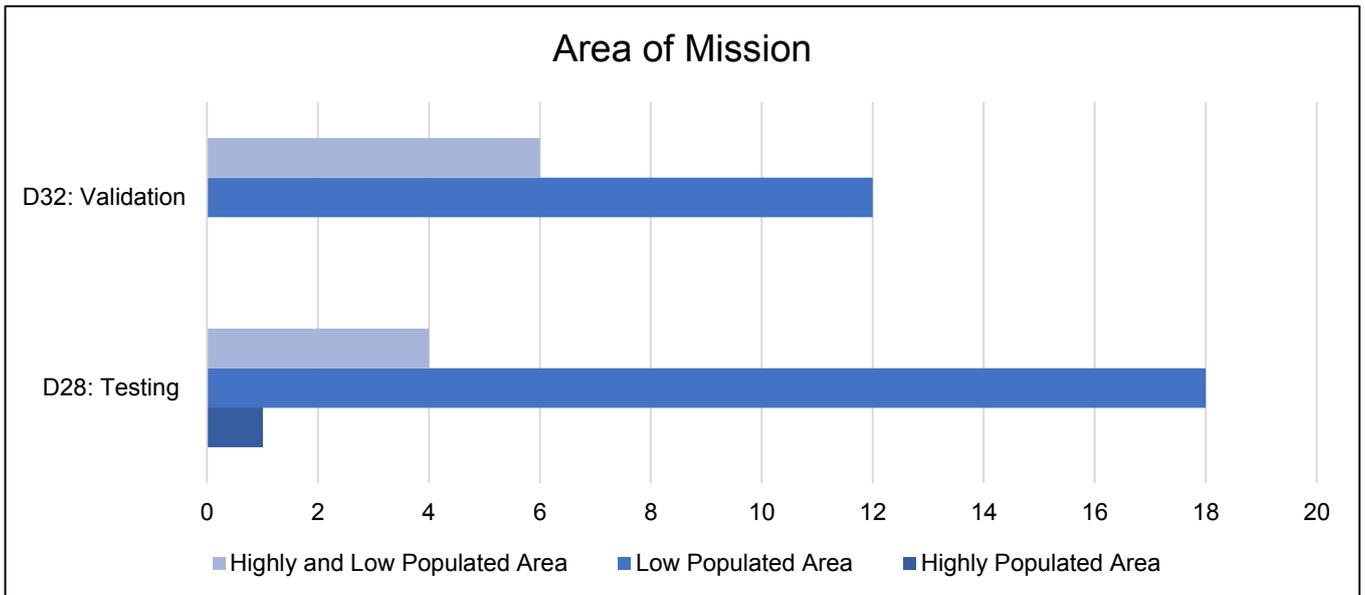
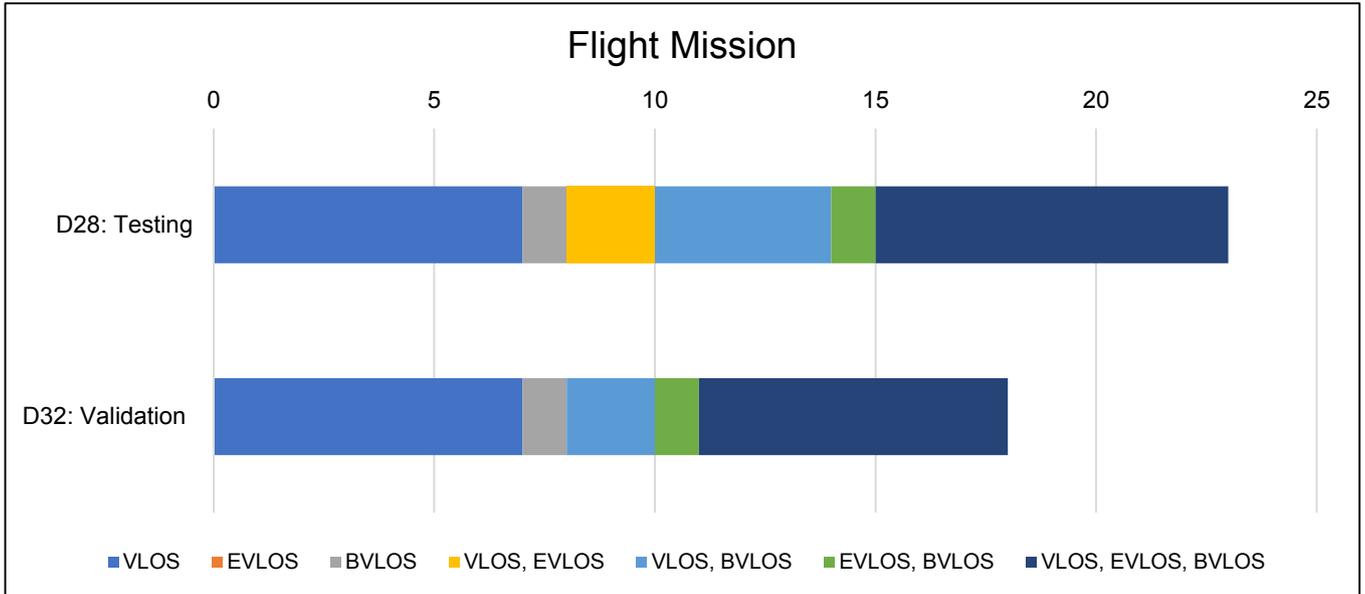
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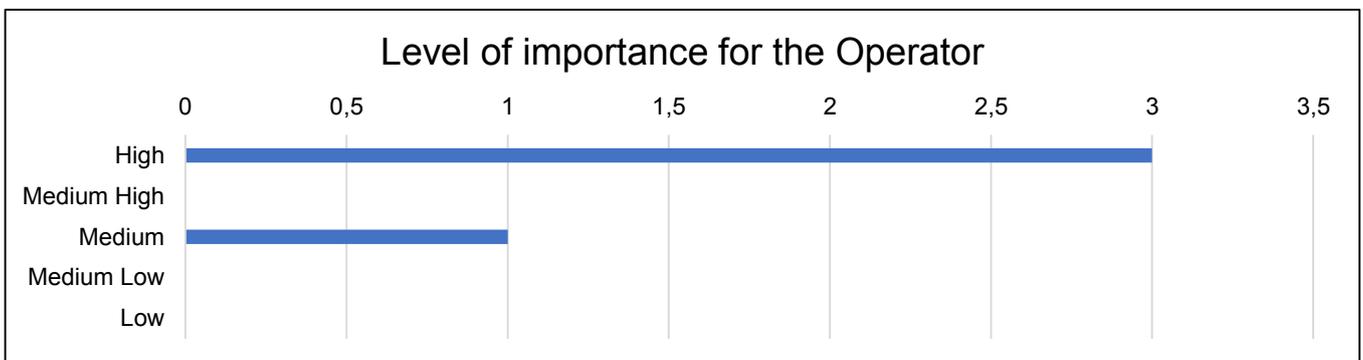
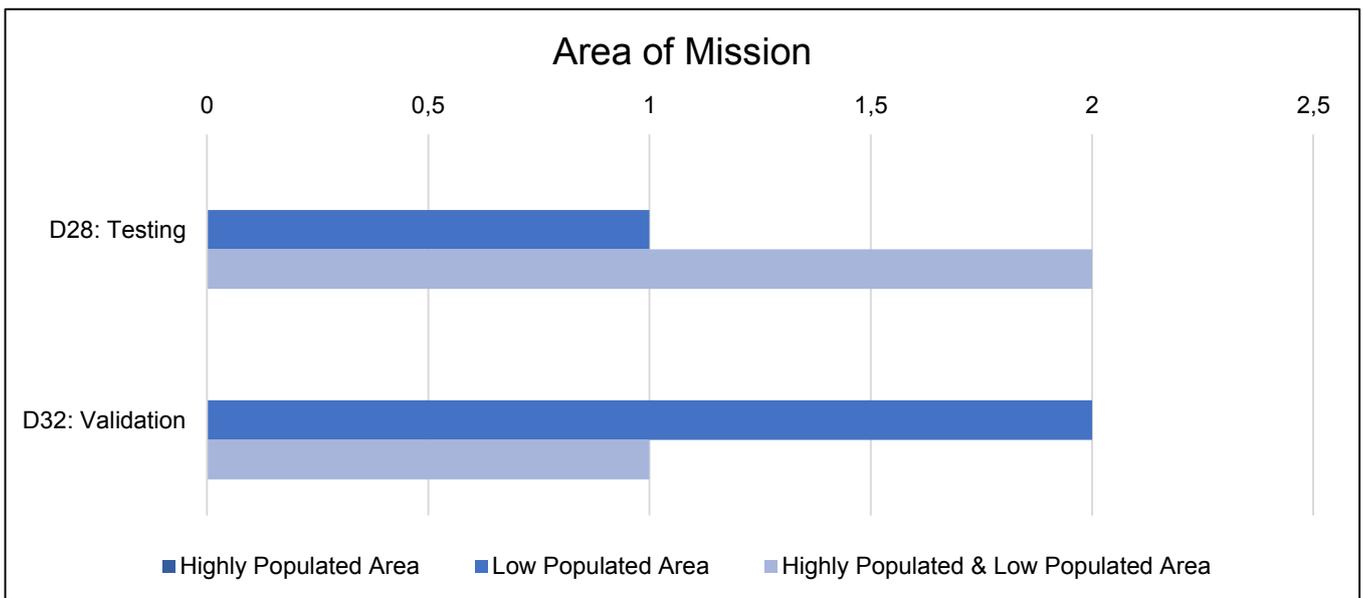
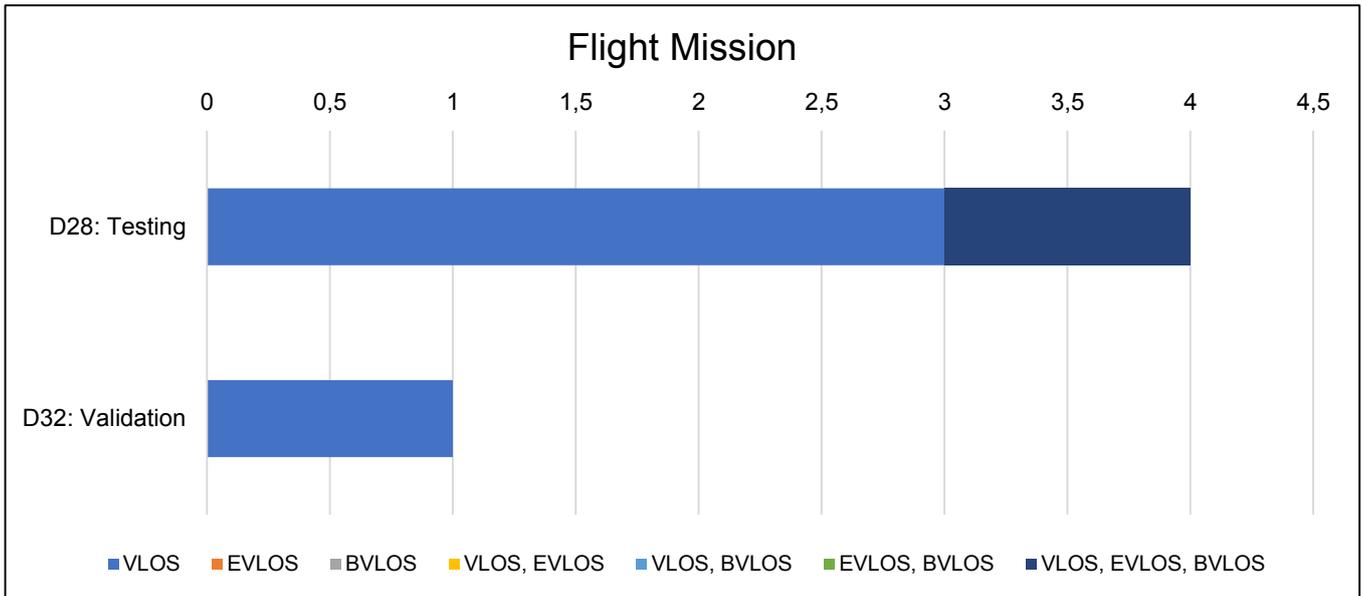
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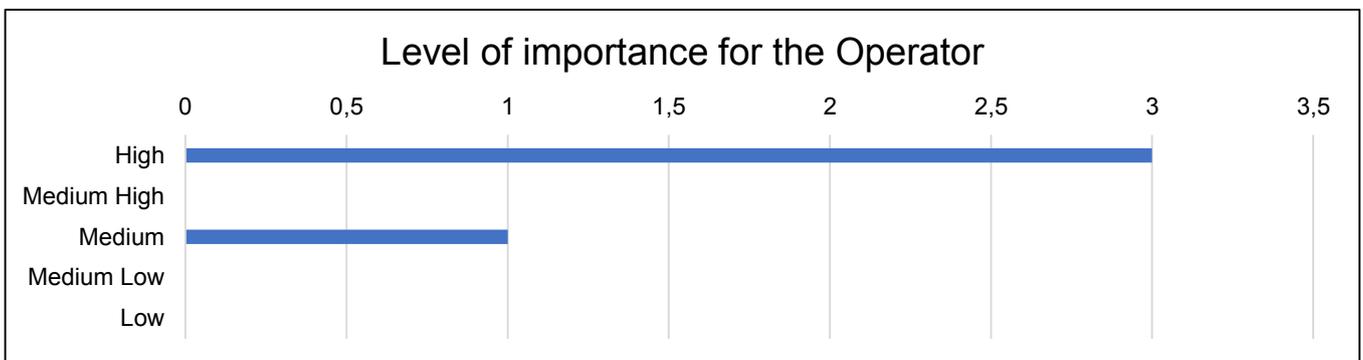
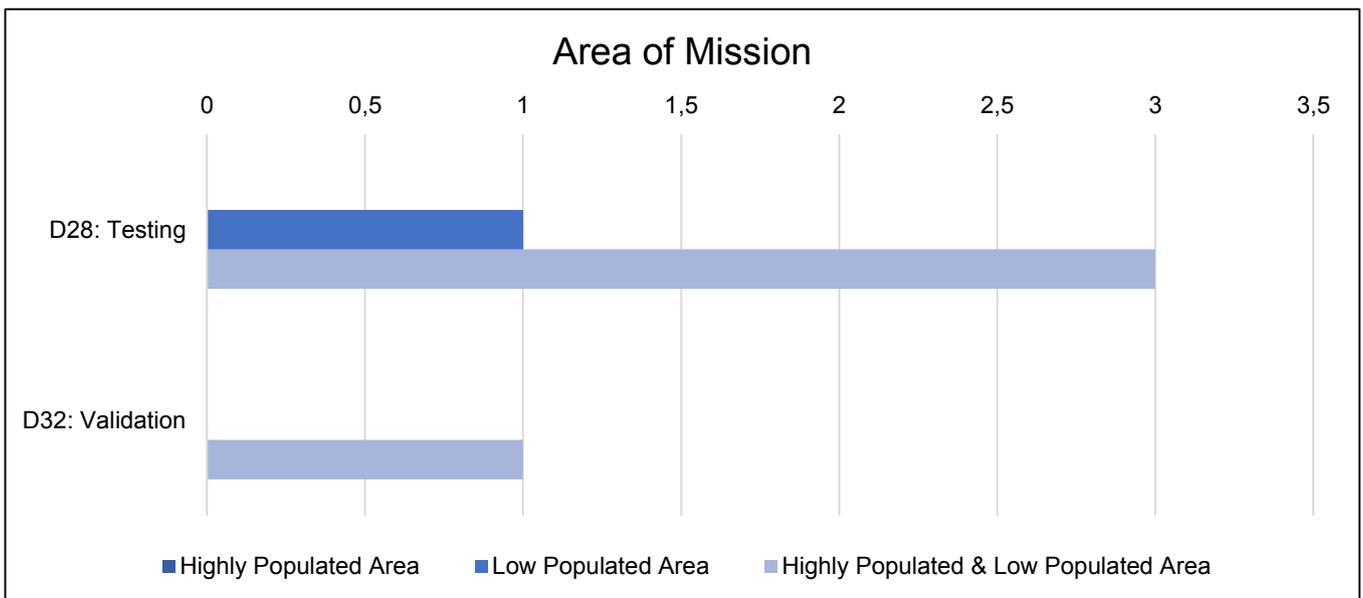
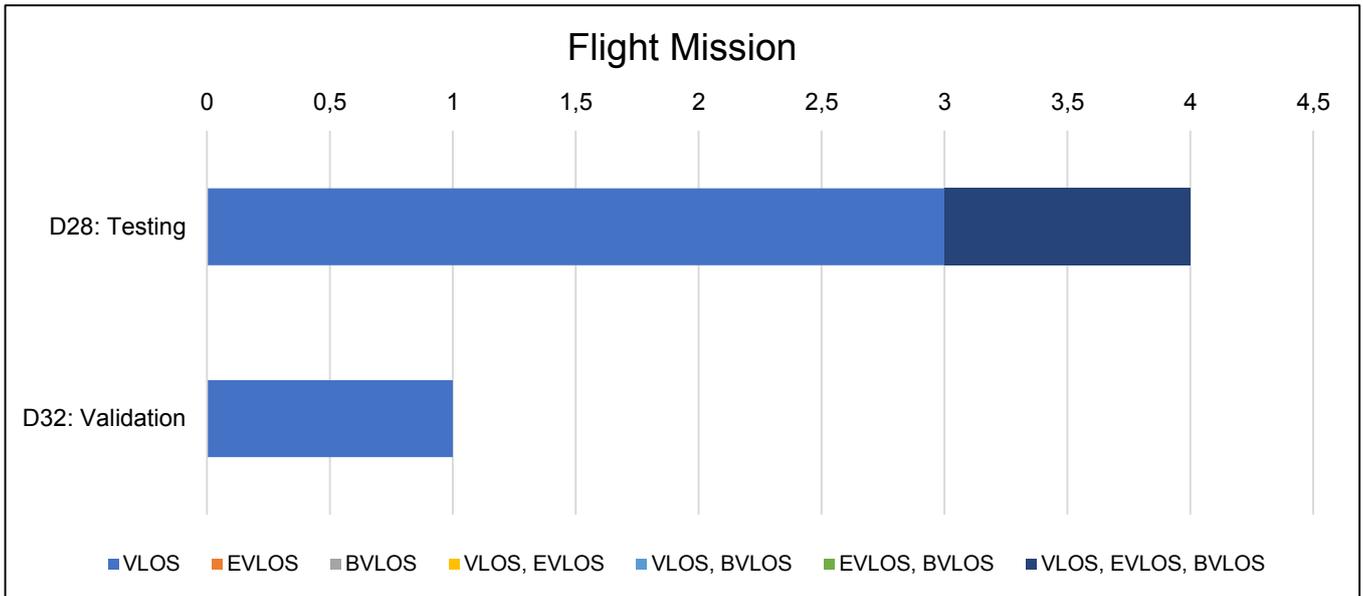
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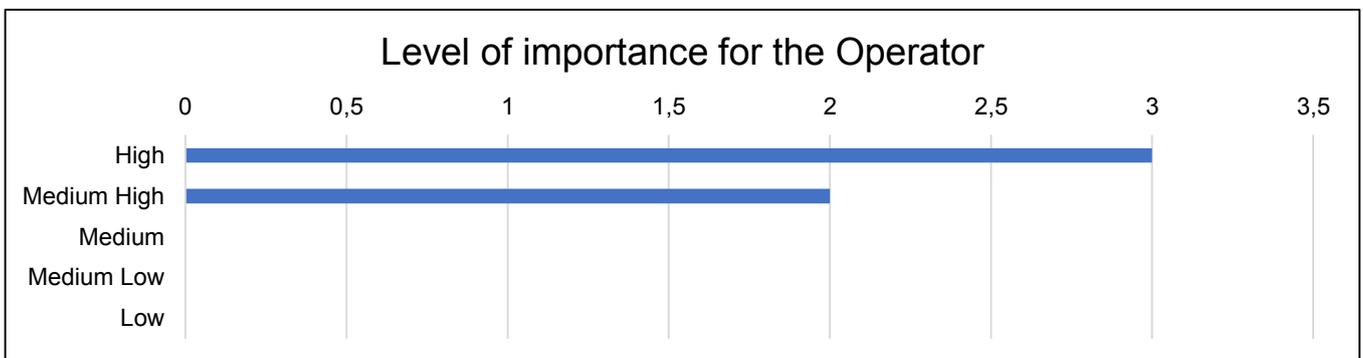
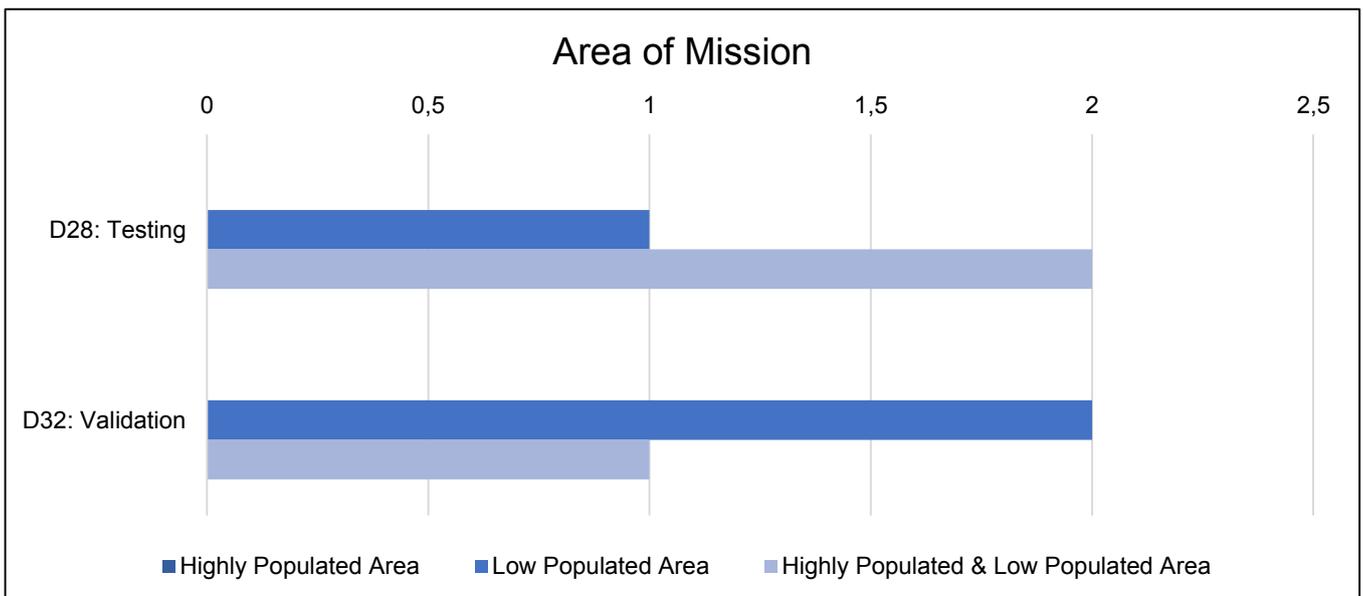
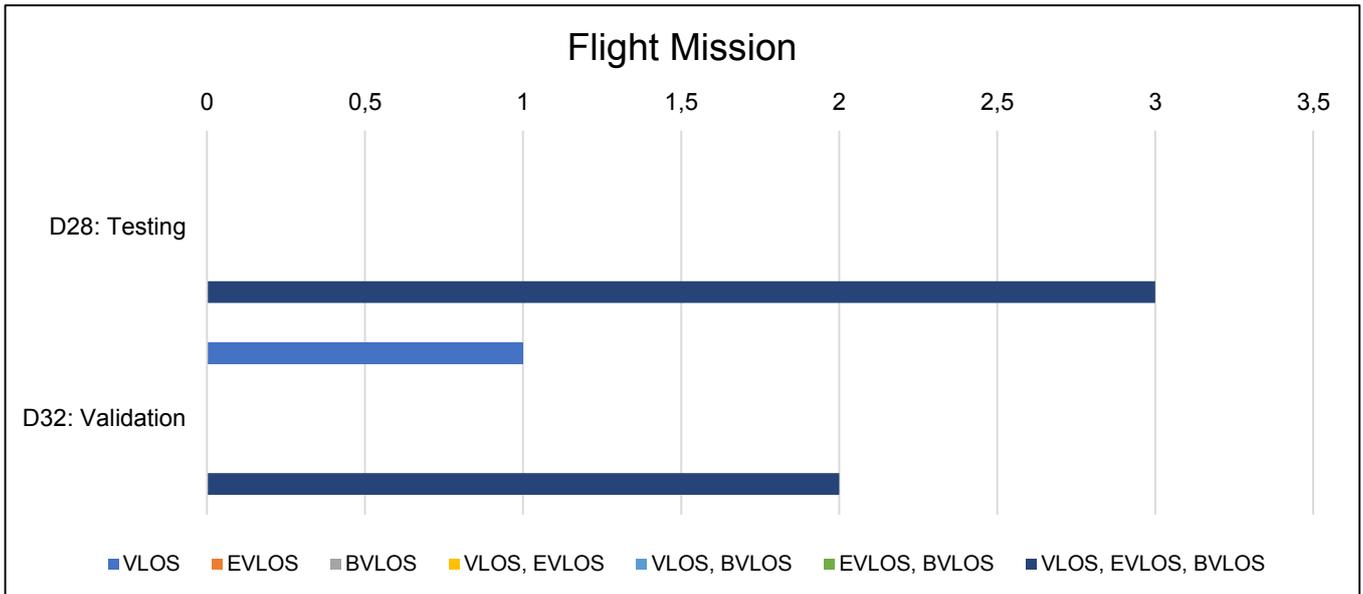
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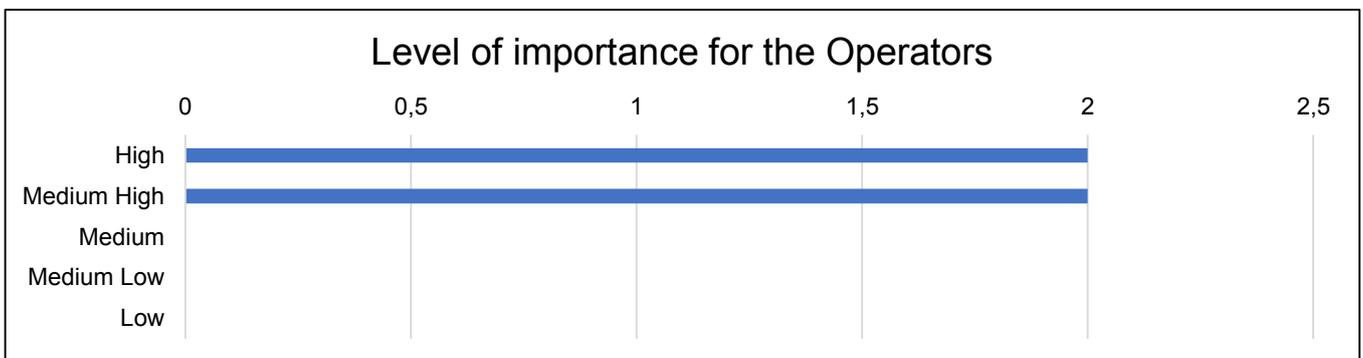
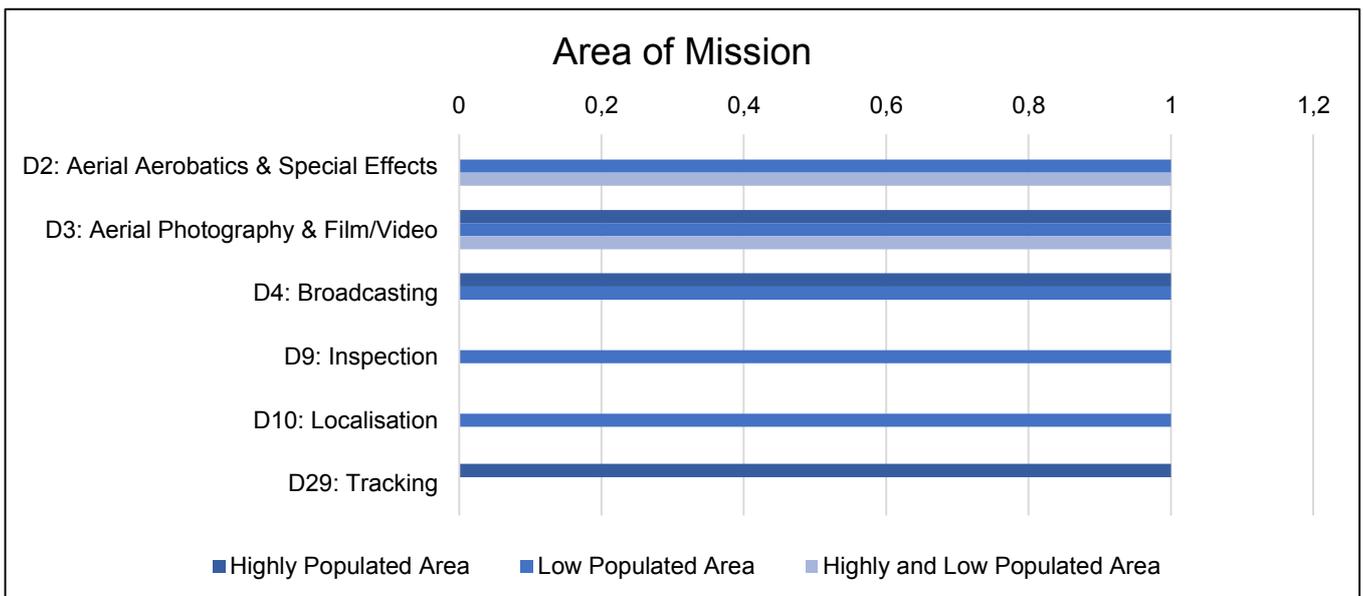
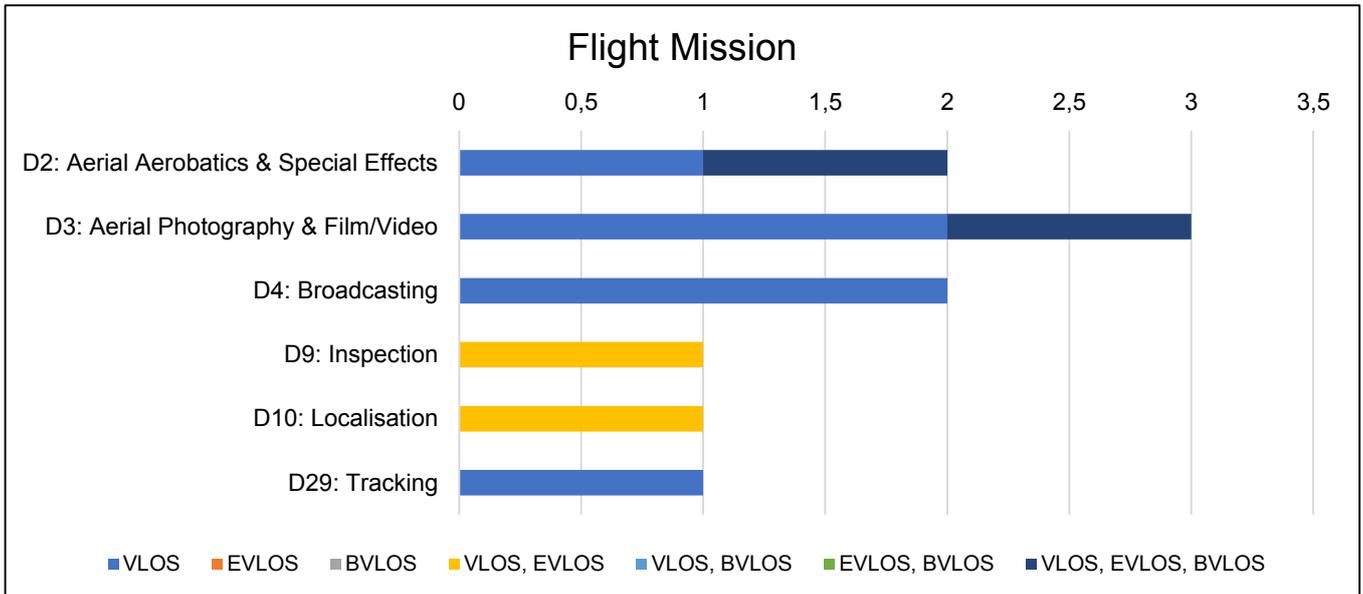
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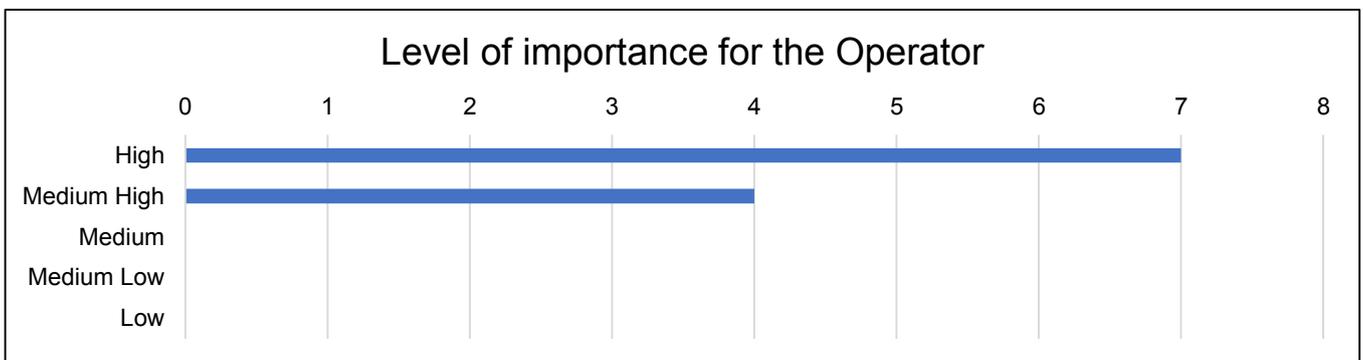
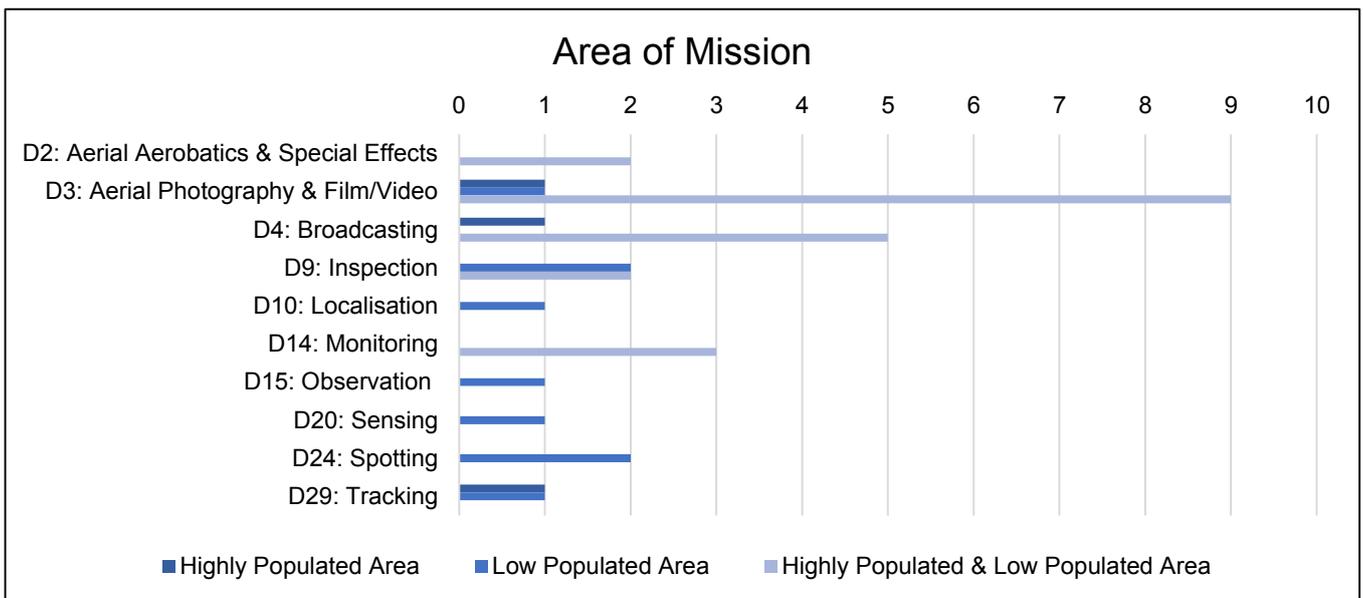
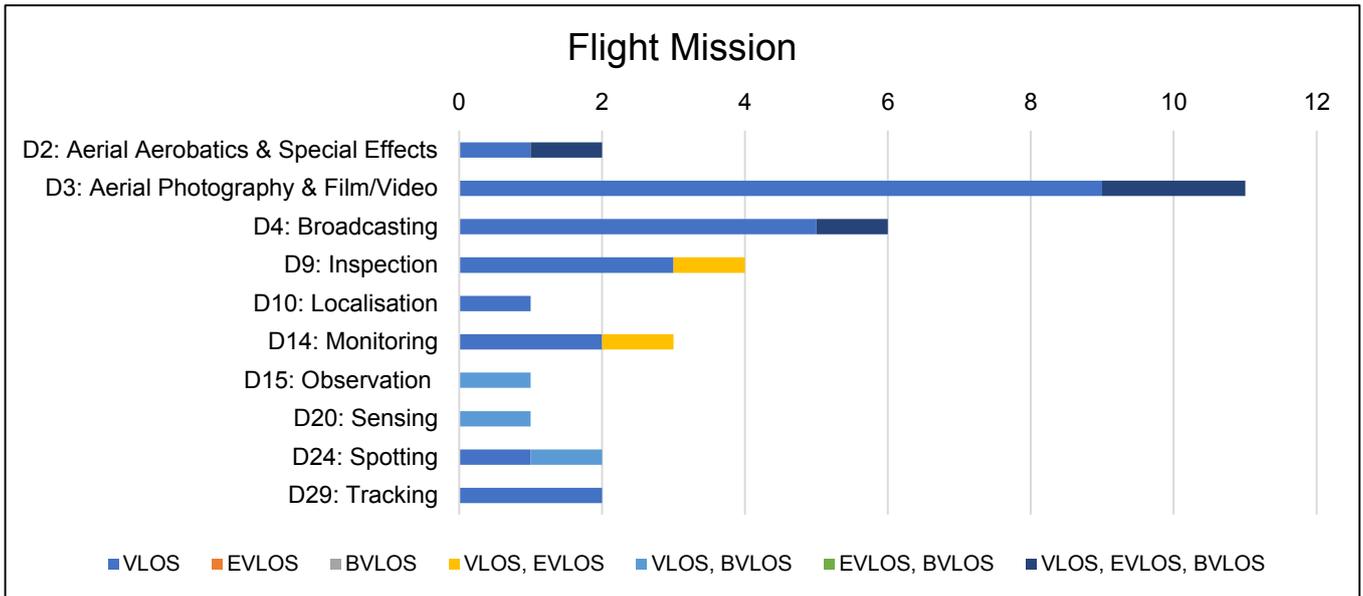
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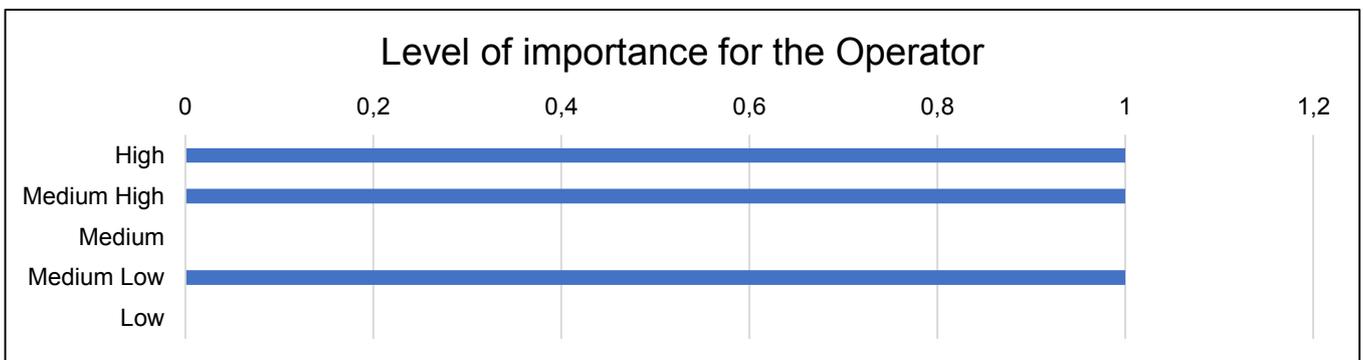
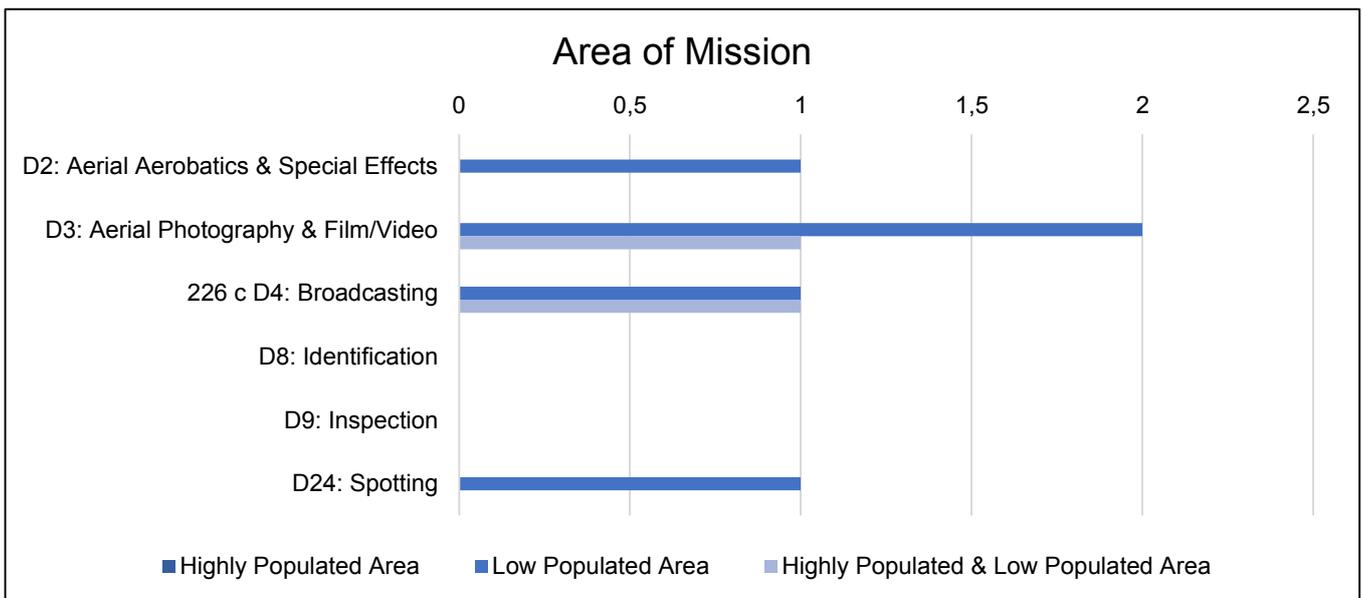
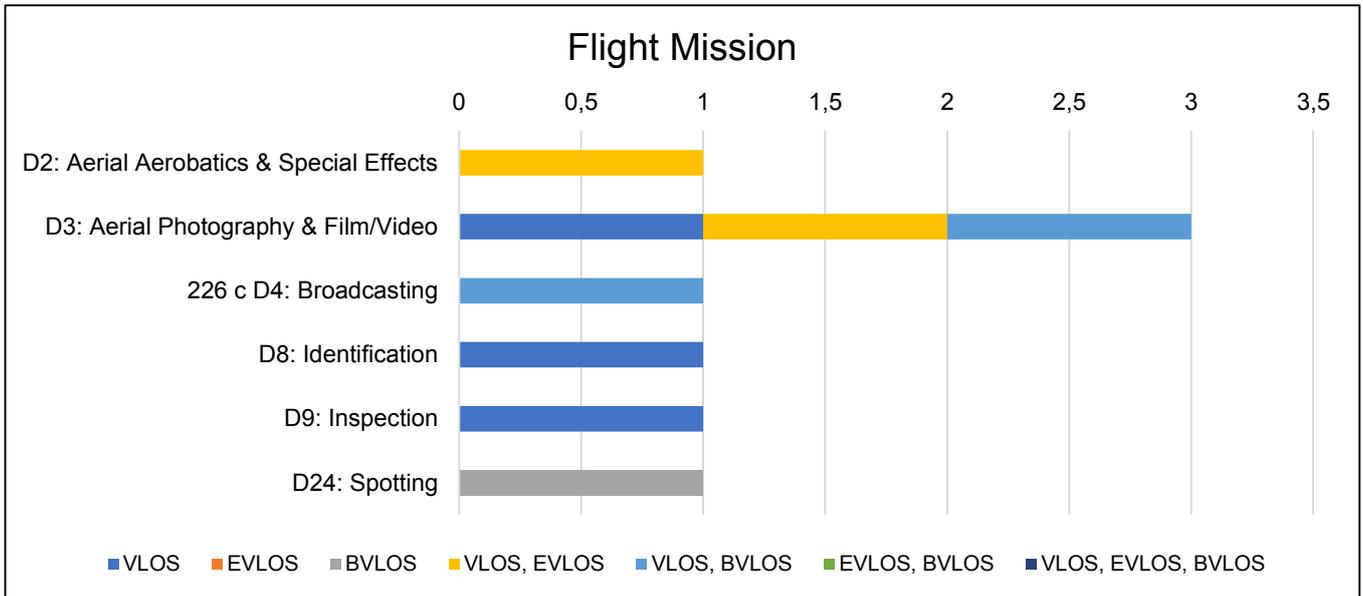
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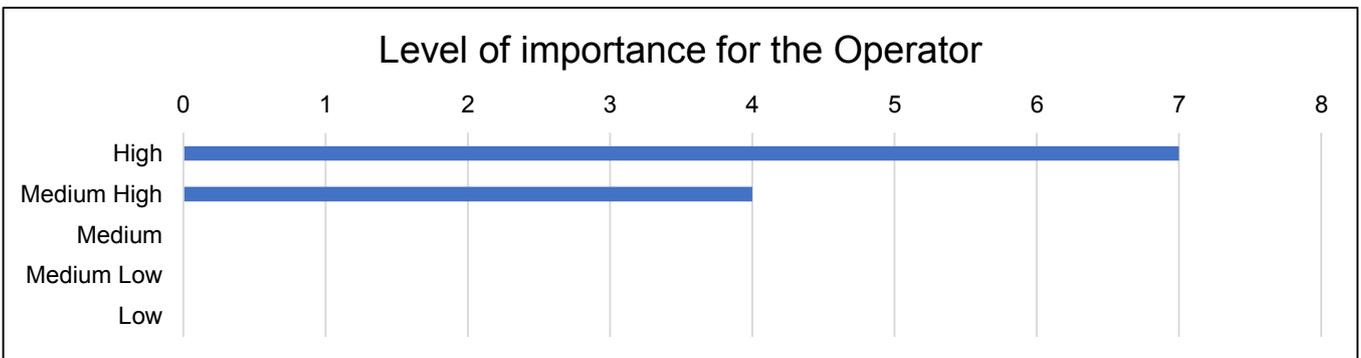
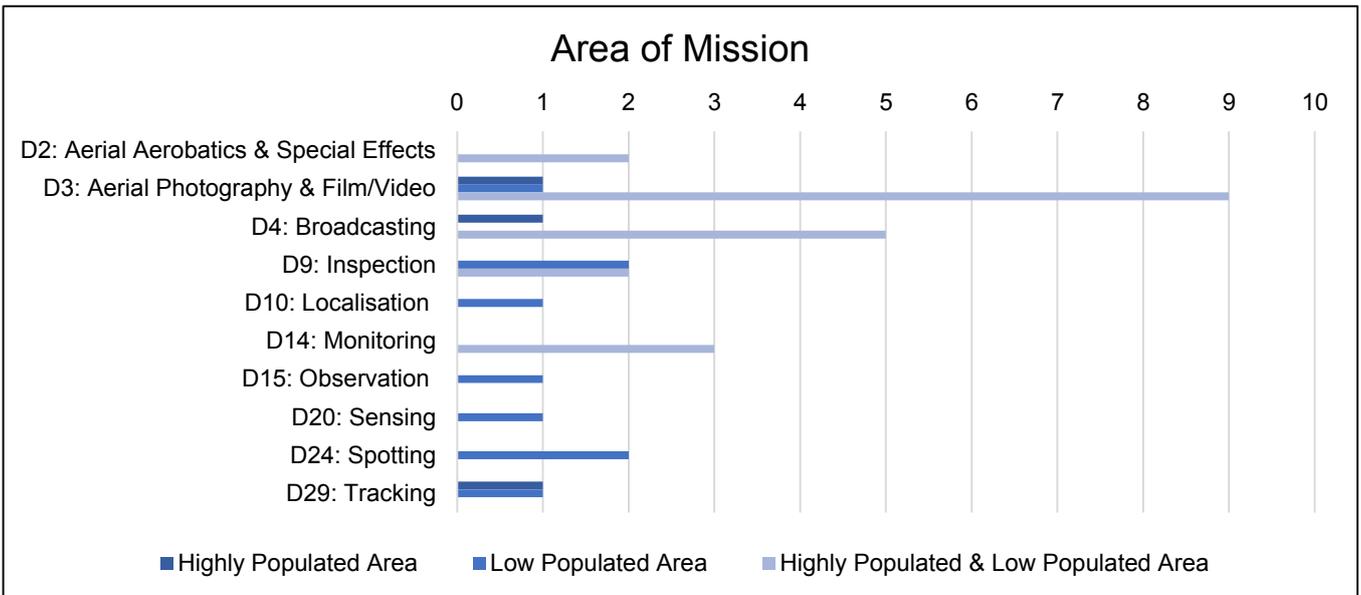
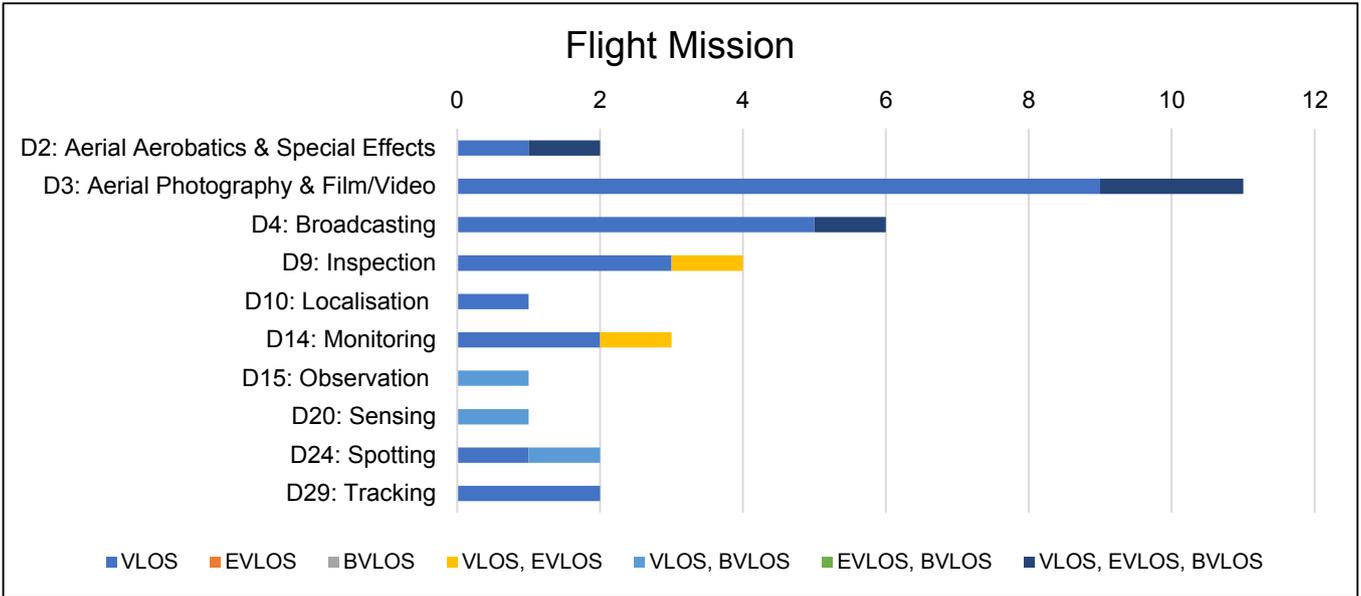
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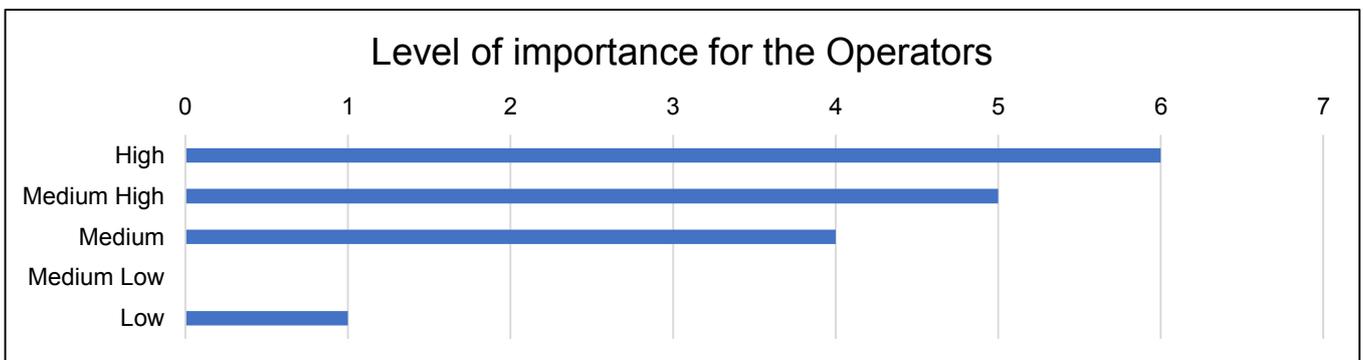
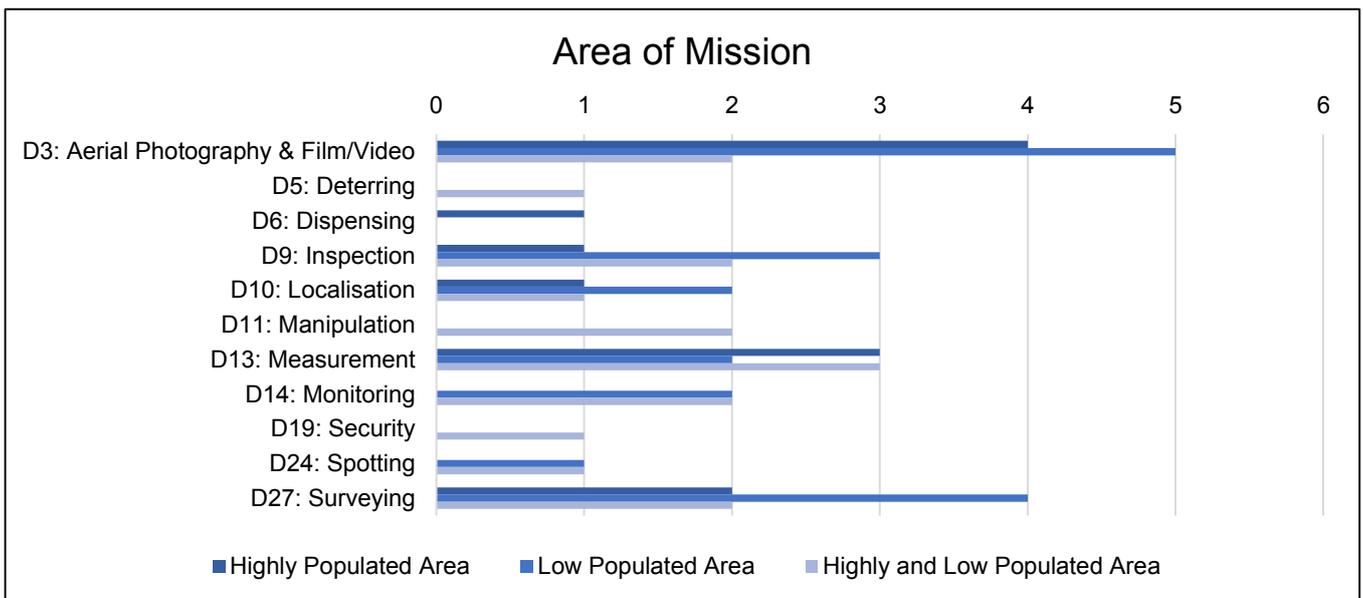
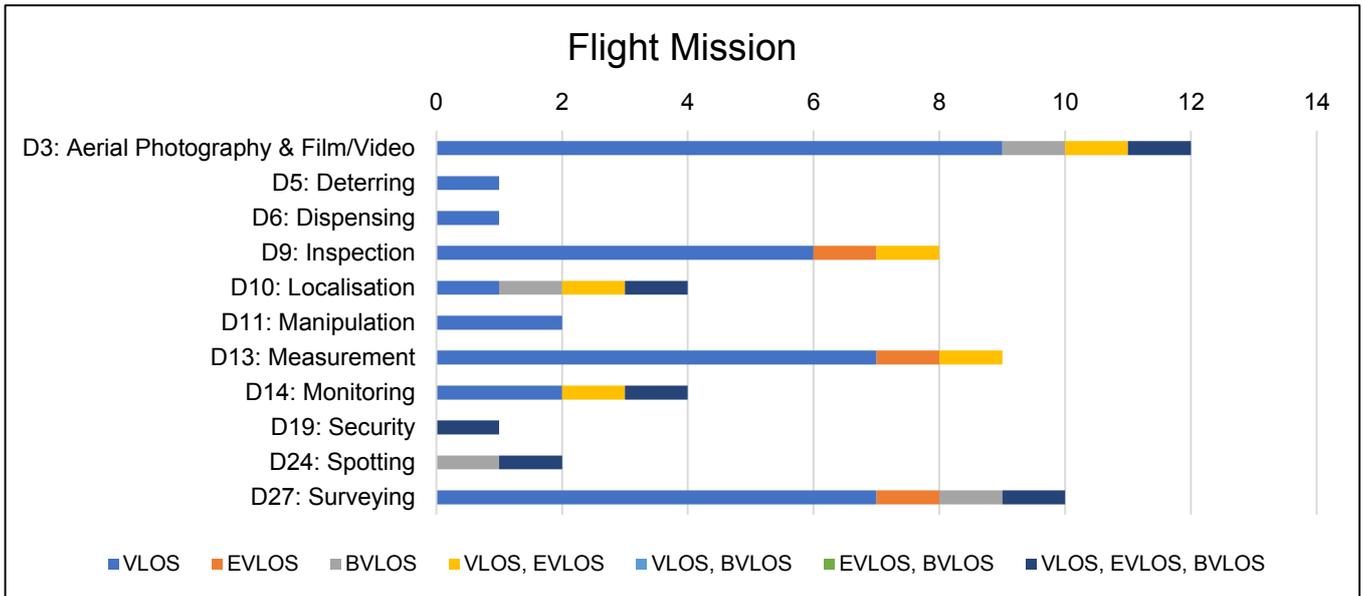
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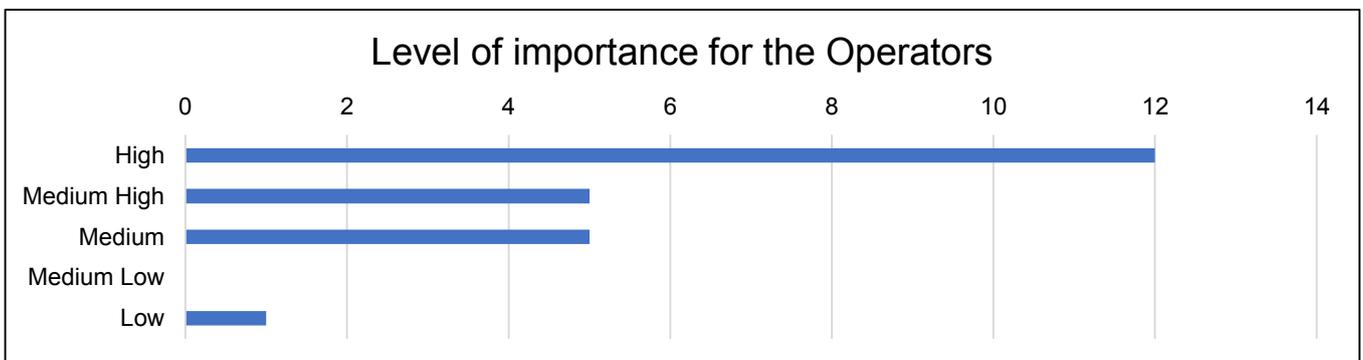
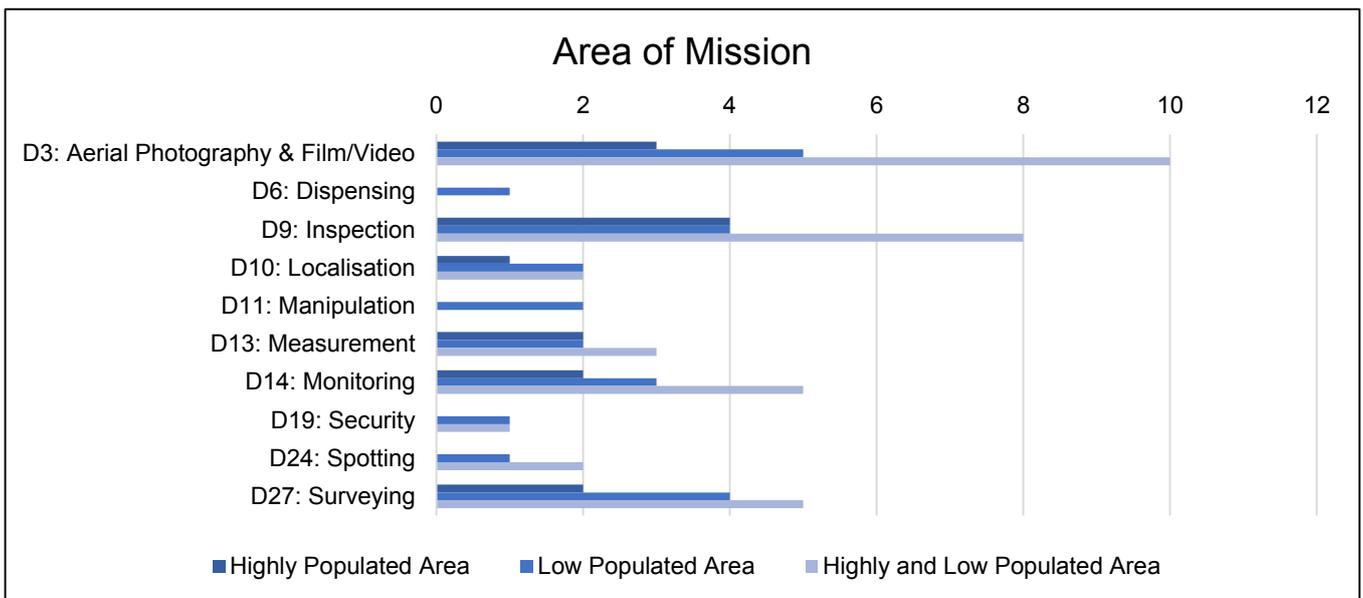
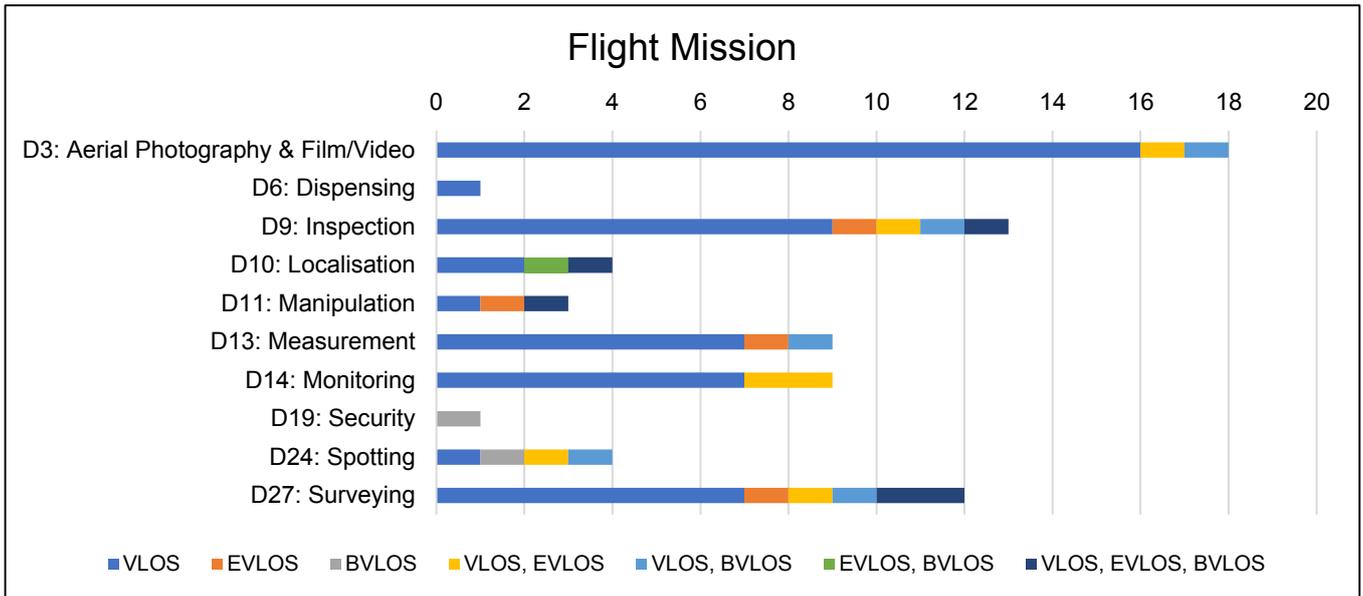
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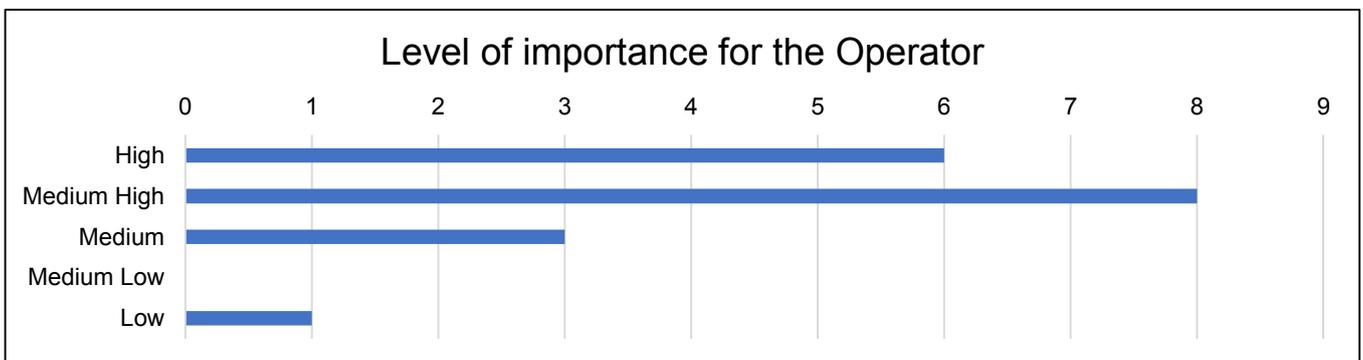
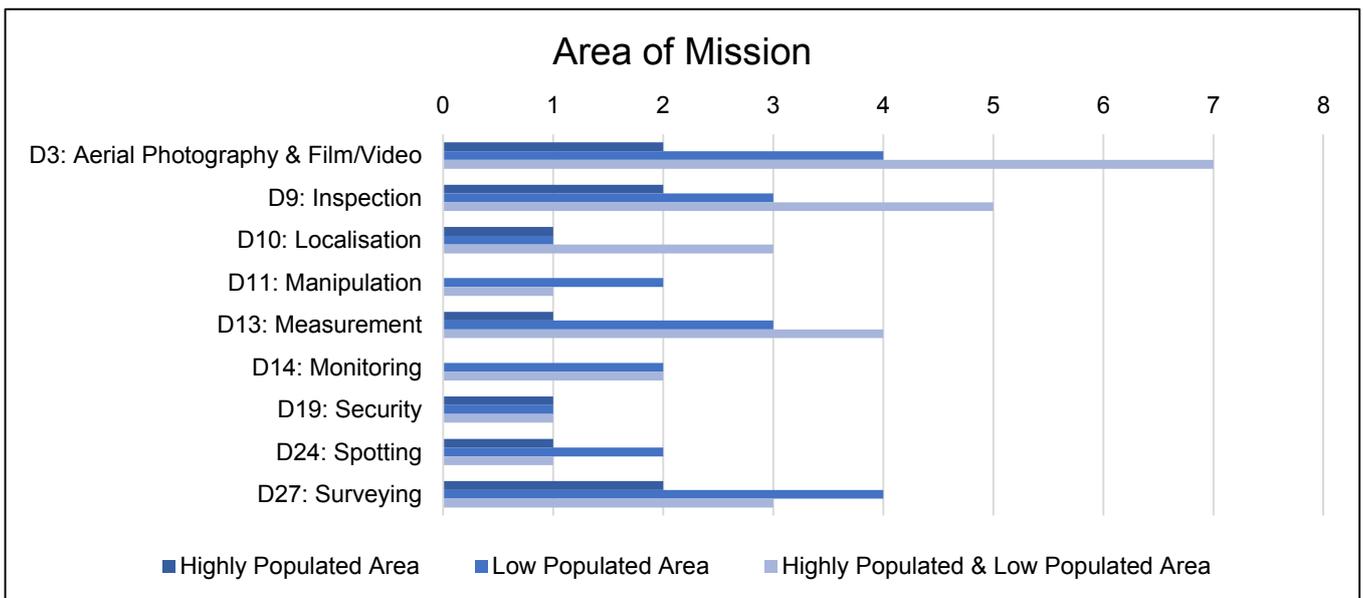
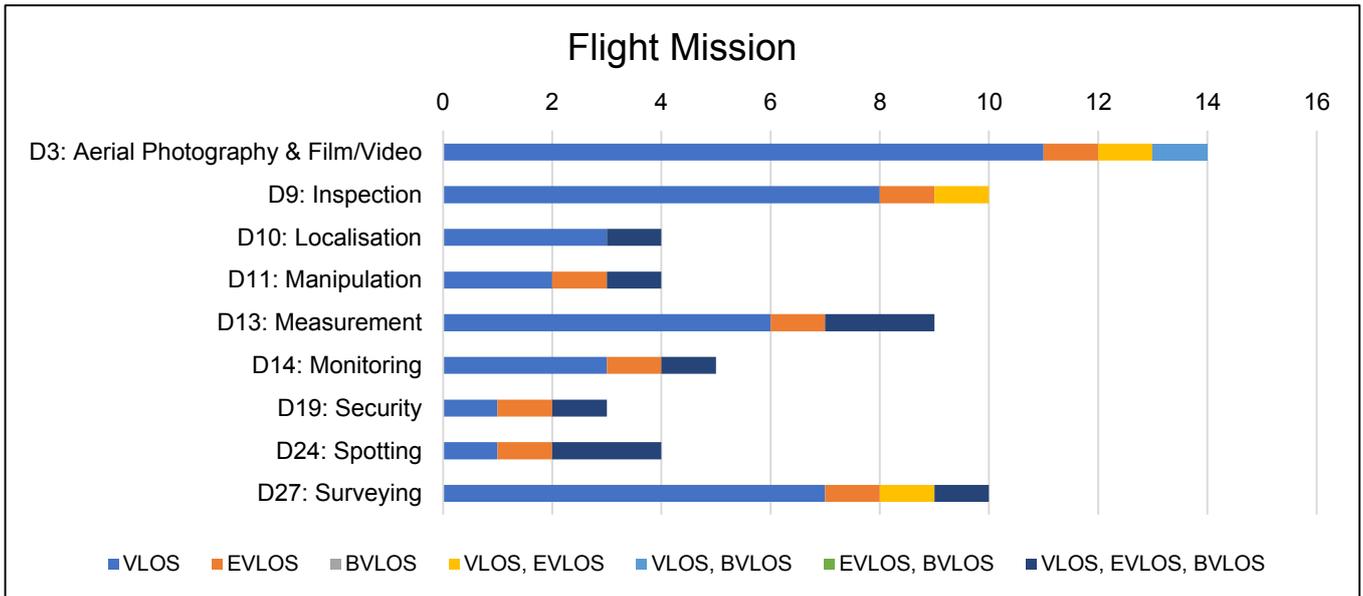
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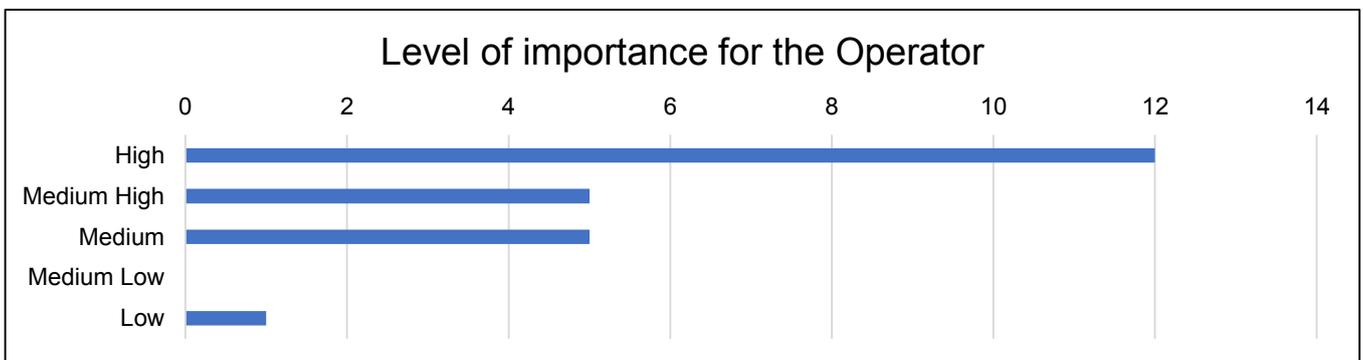
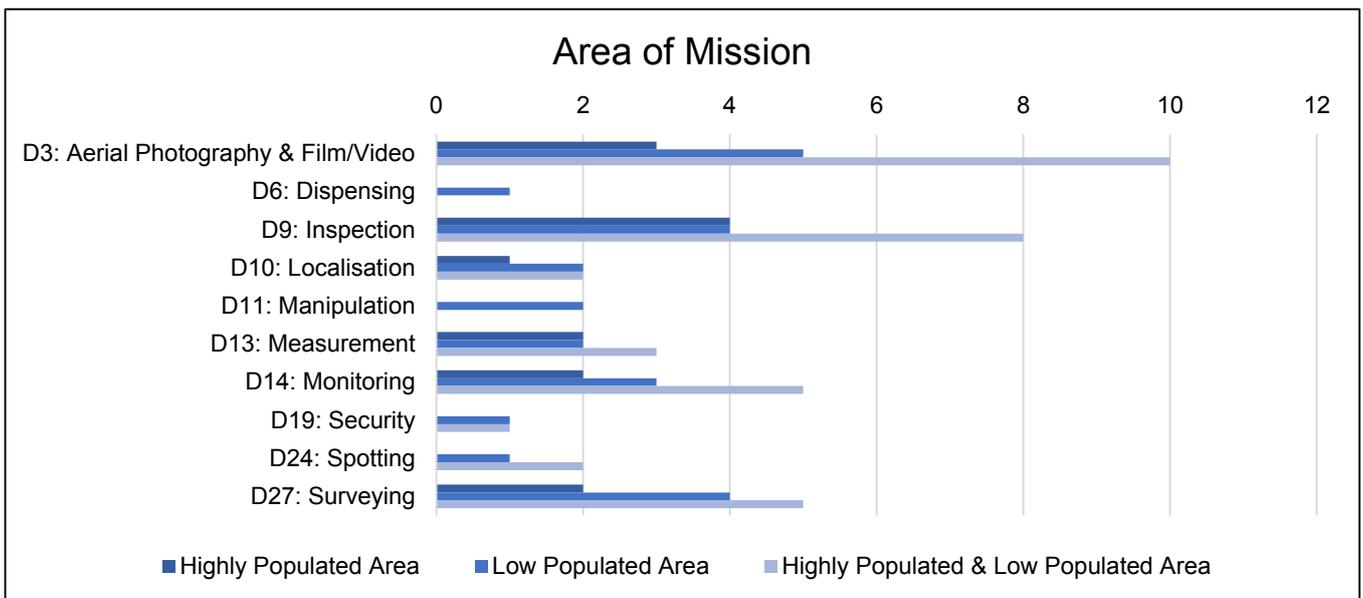
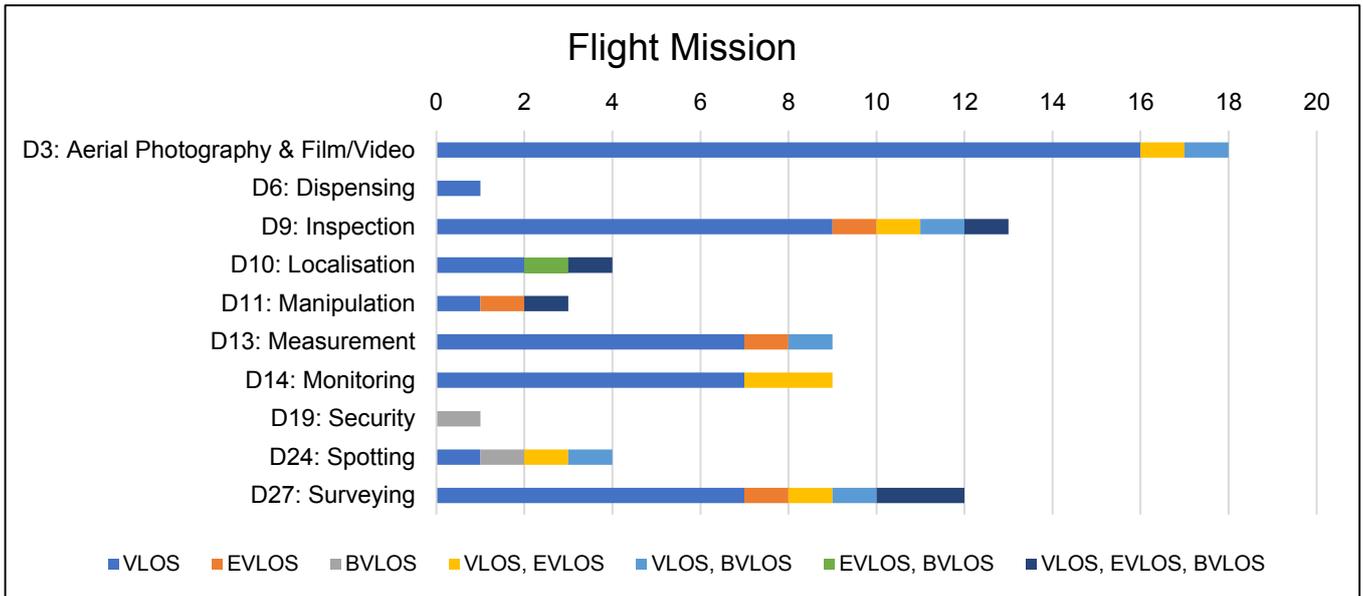
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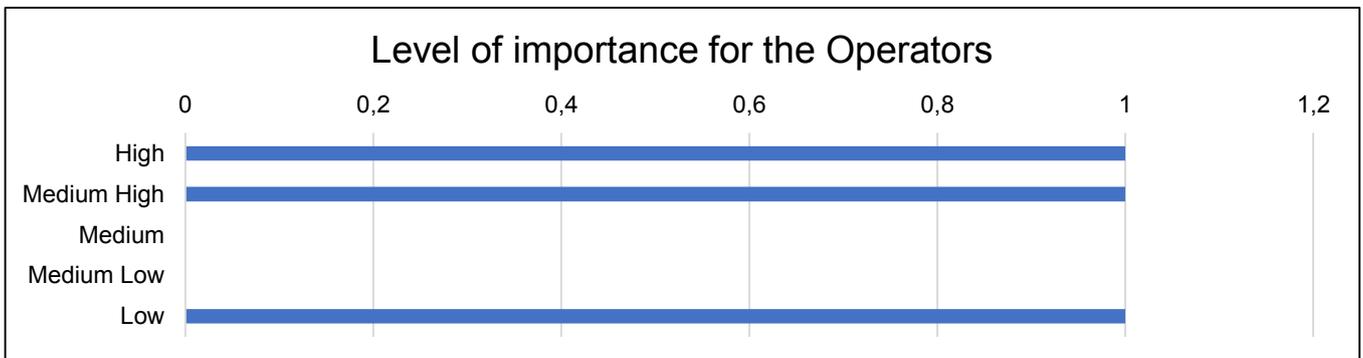
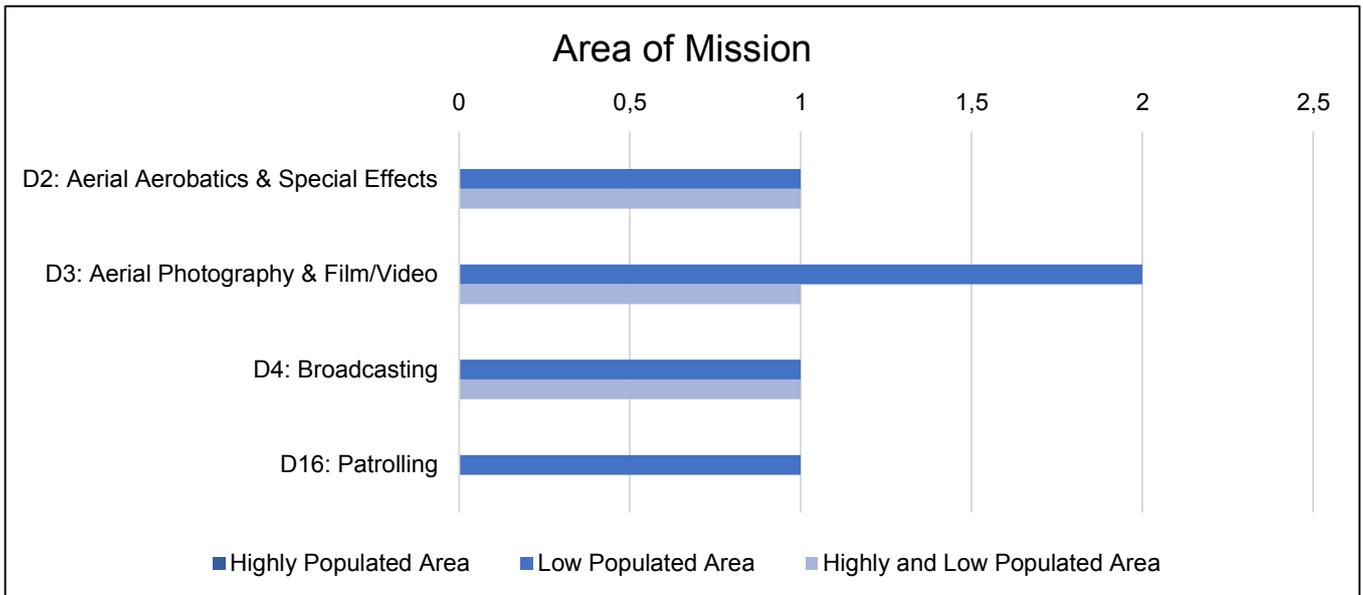
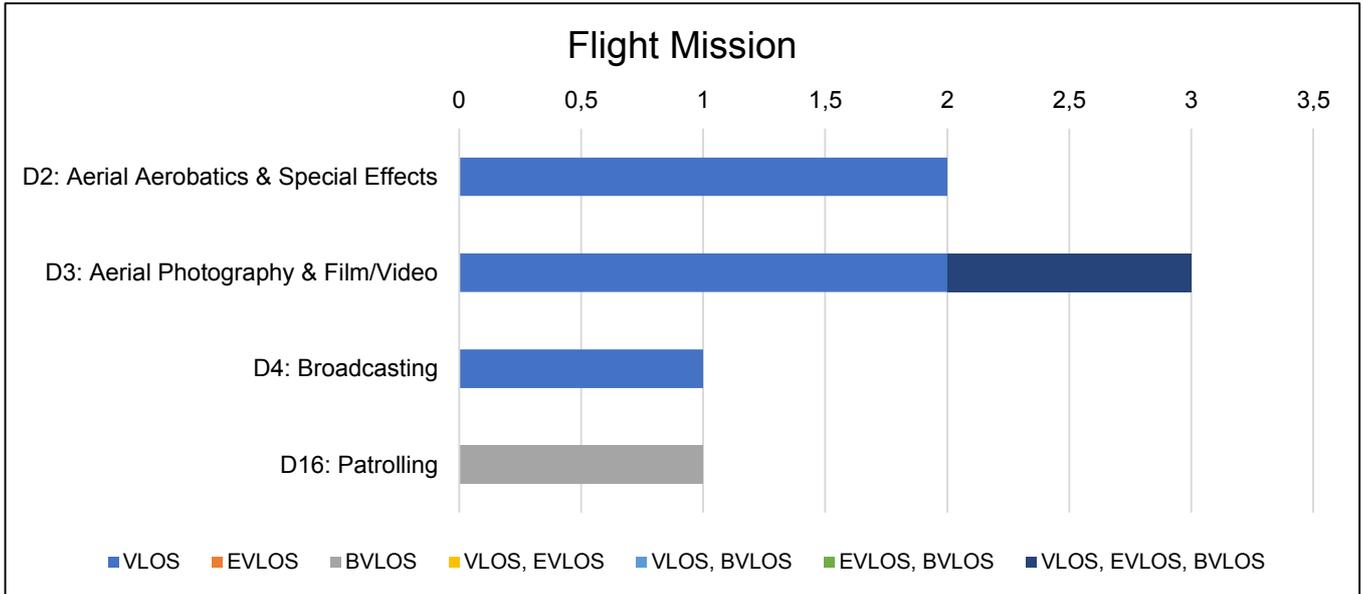
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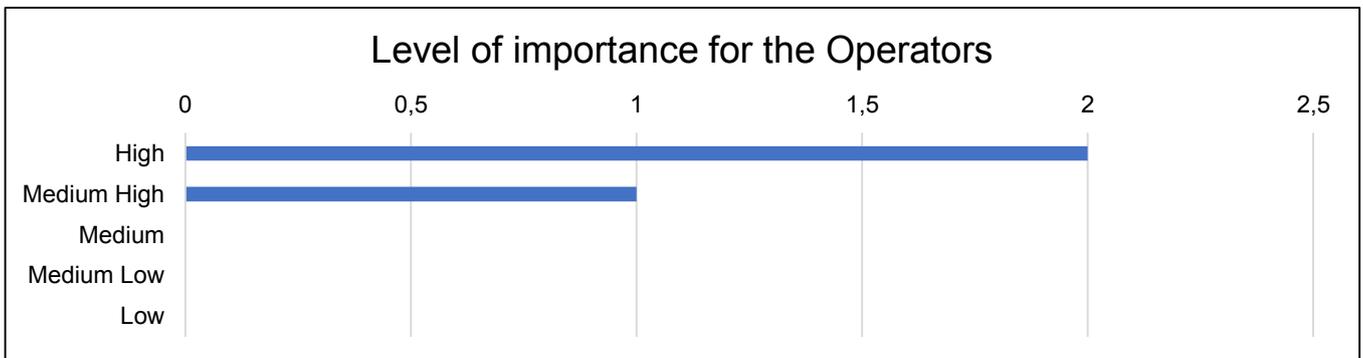
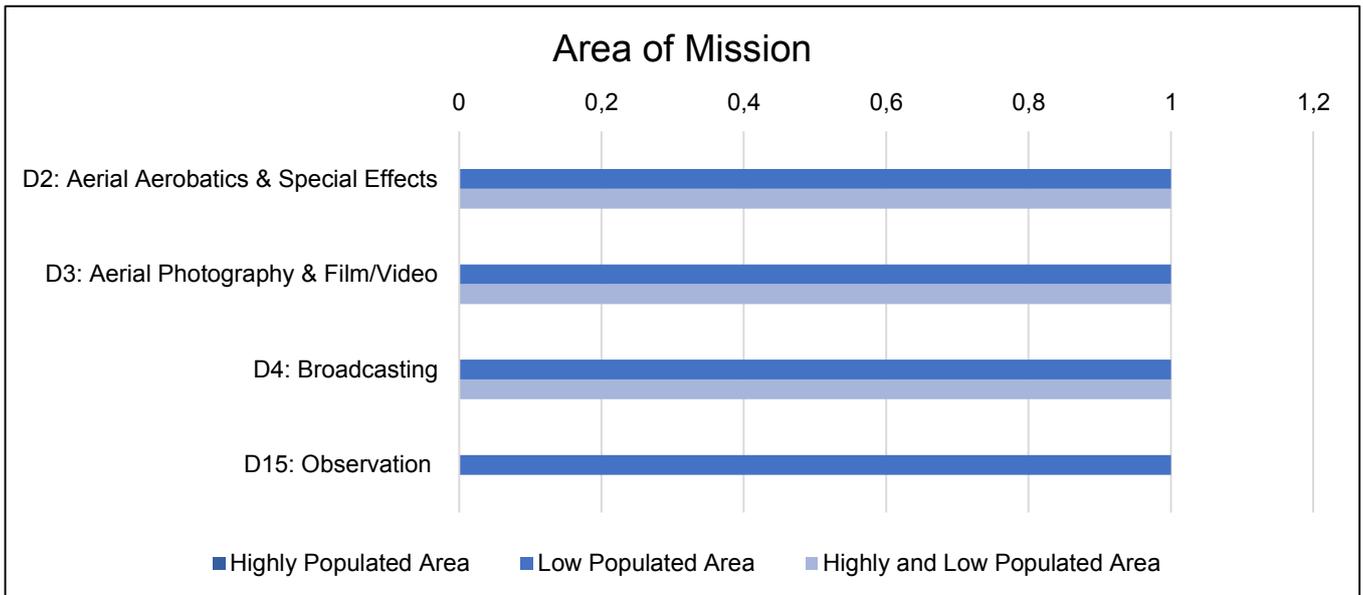
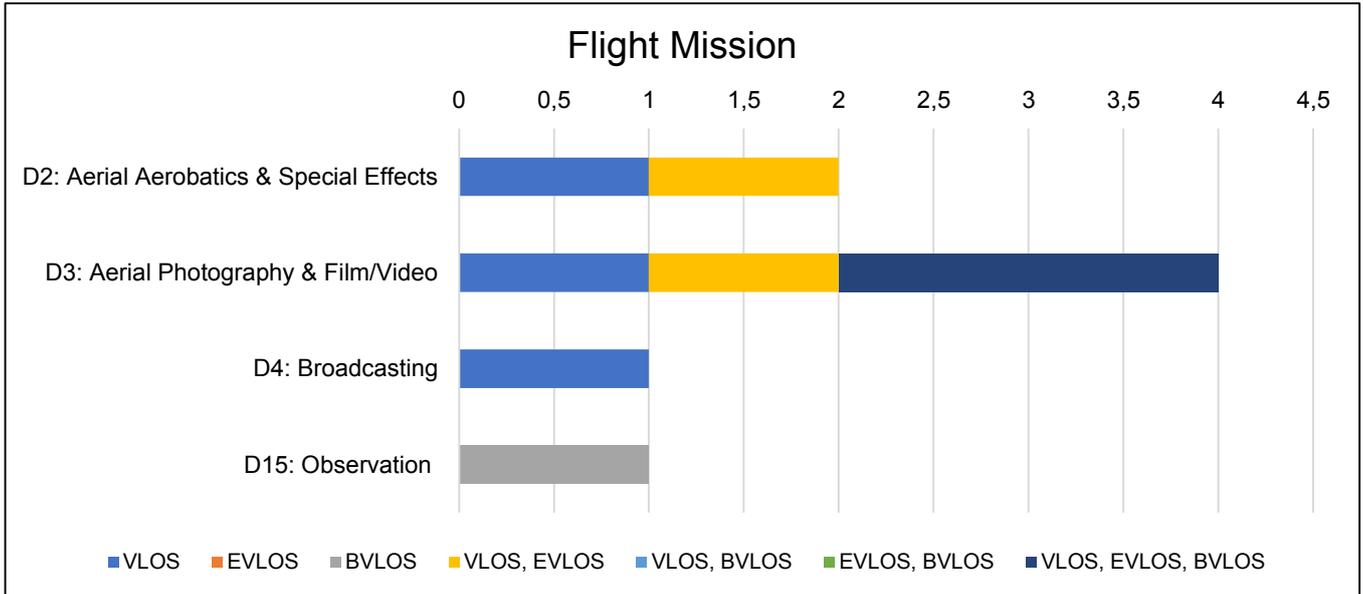
**Survey on Drone Operations & Safety Risk Analysis Methods**



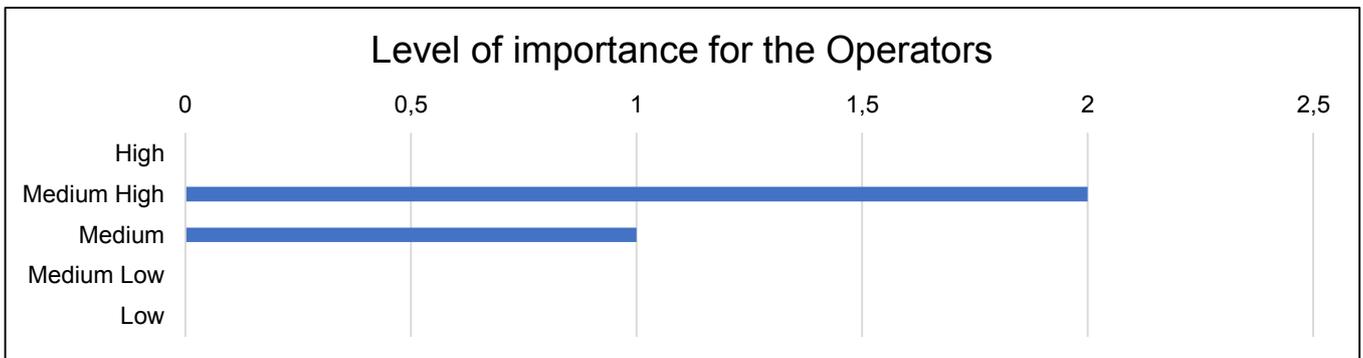
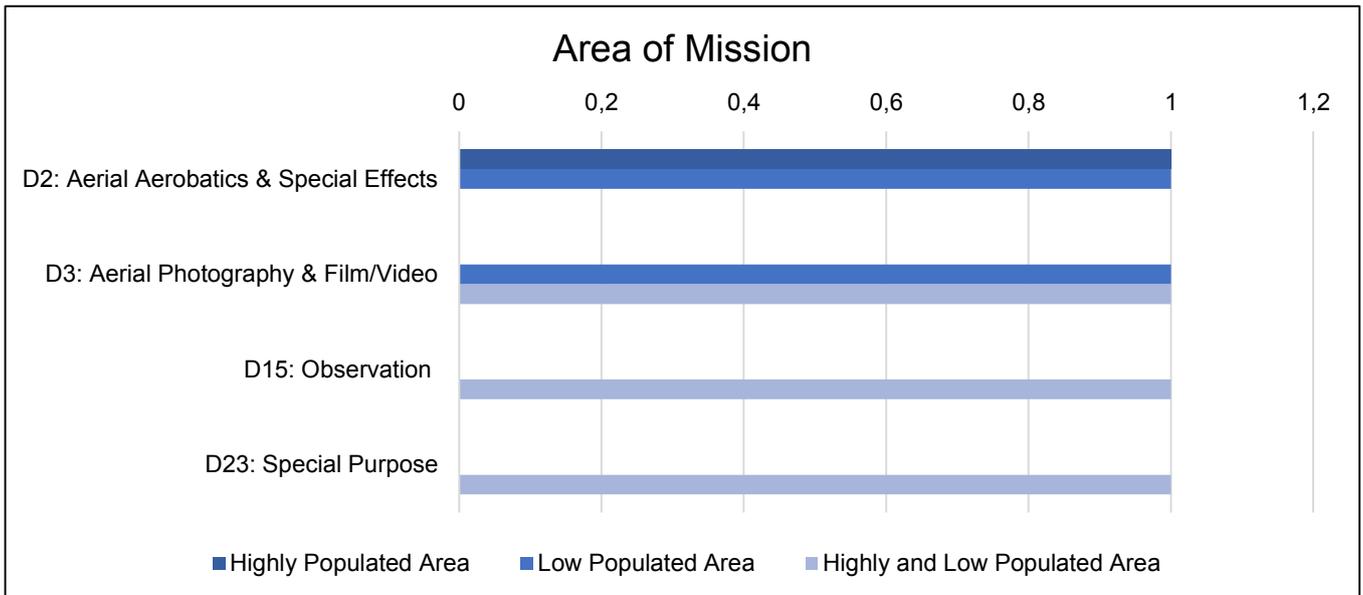
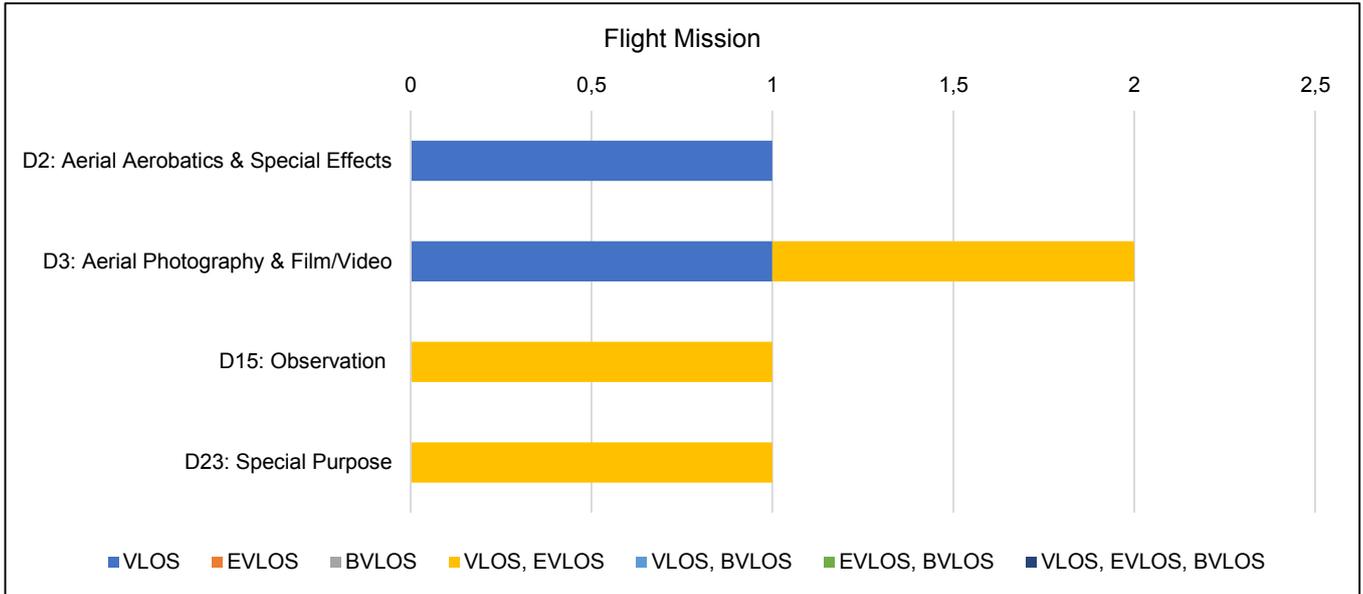
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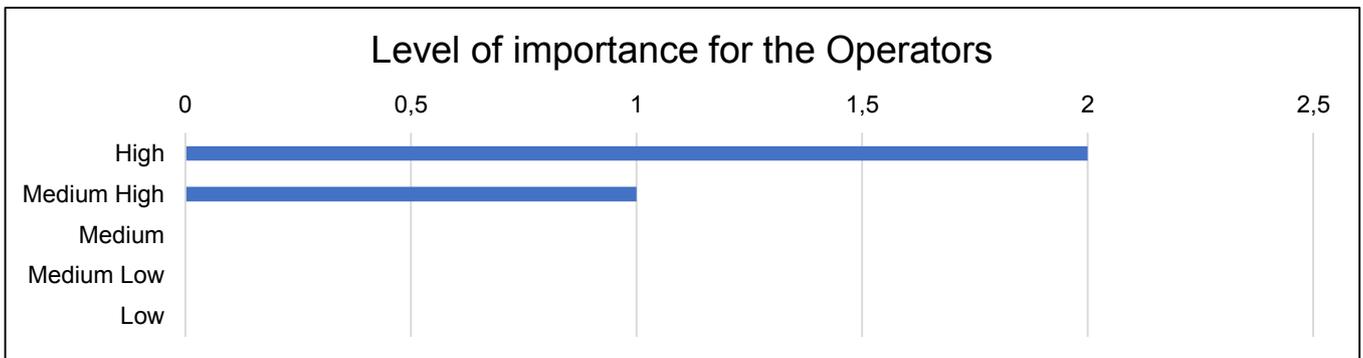
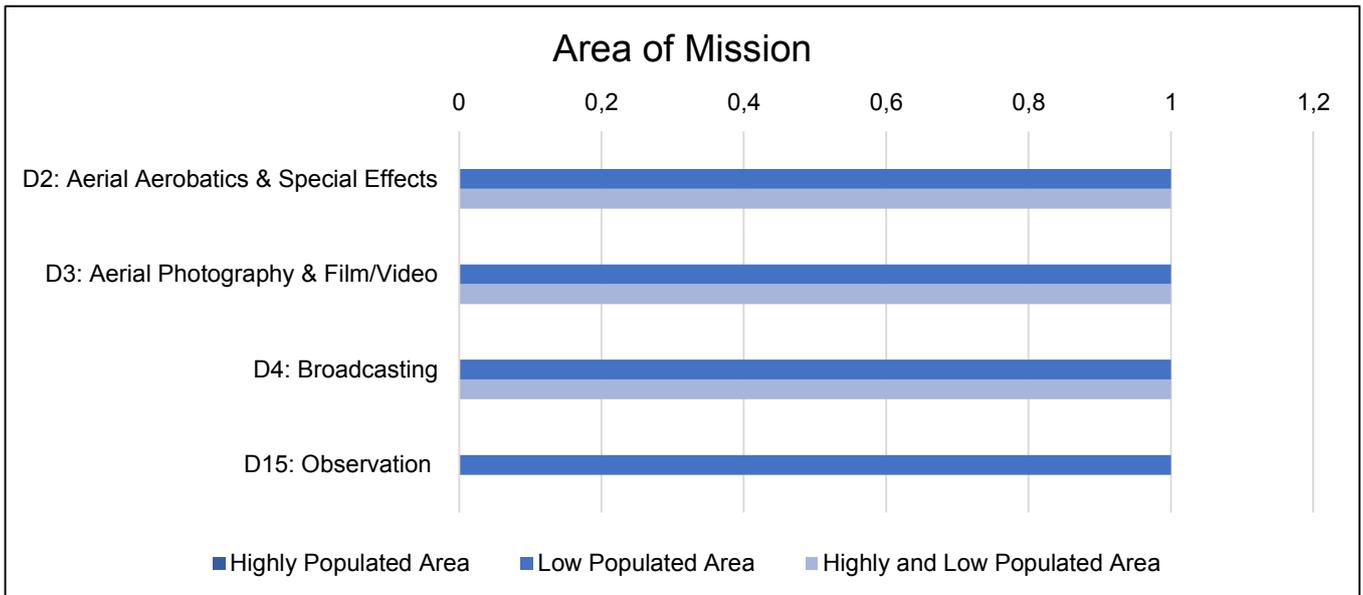
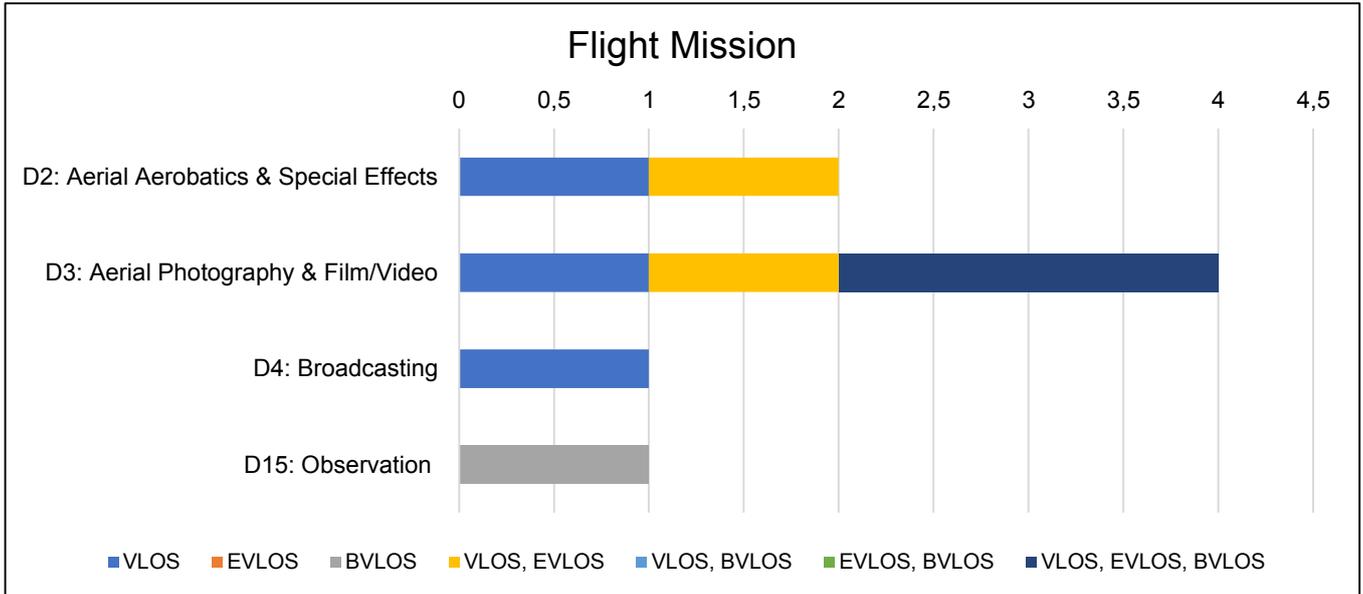
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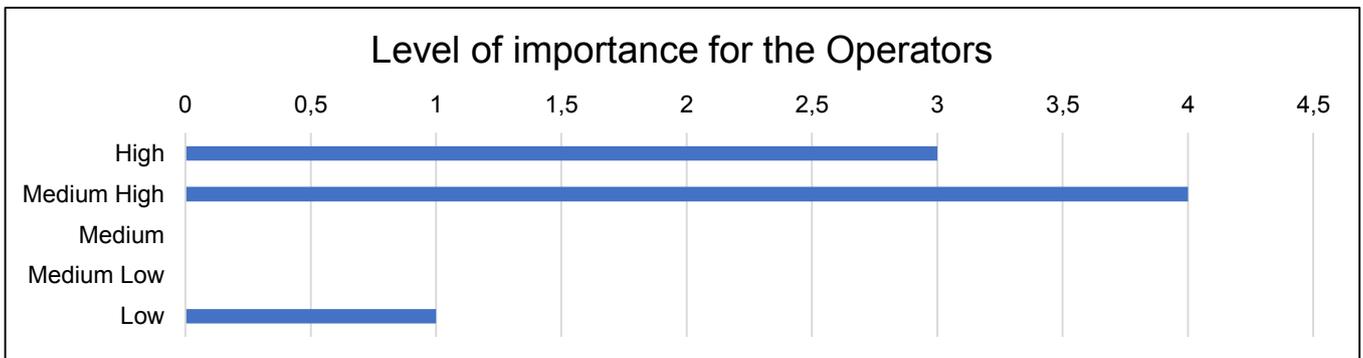
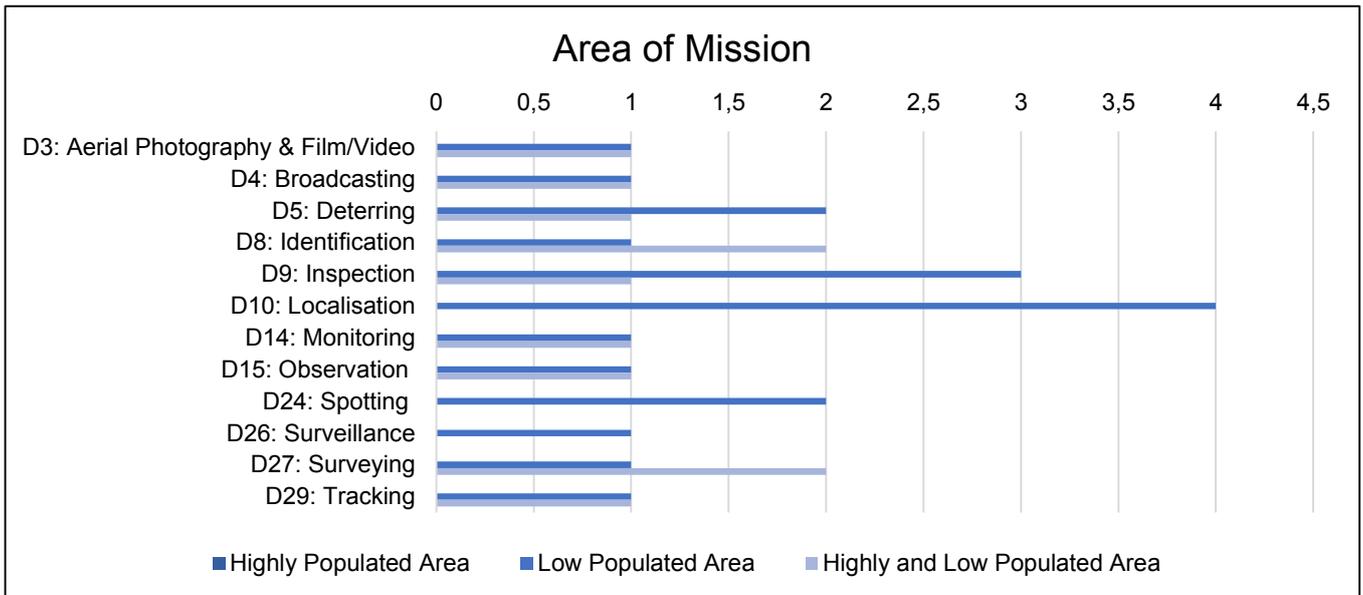
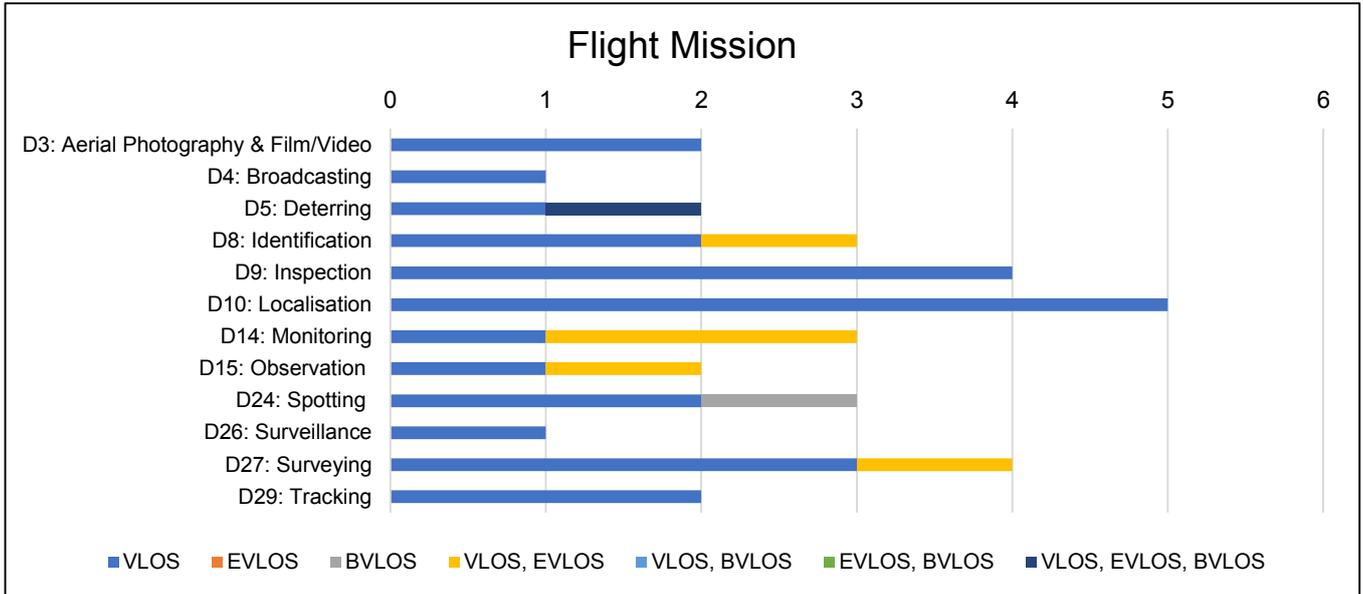
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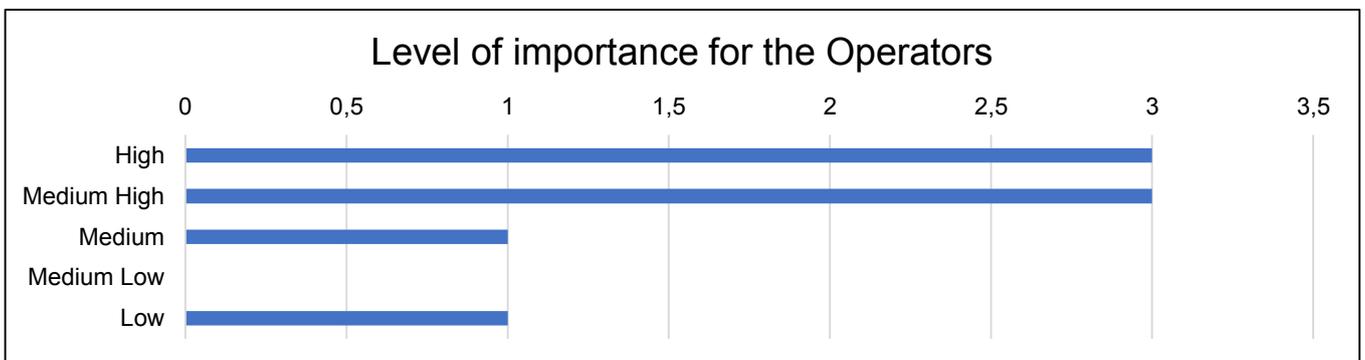
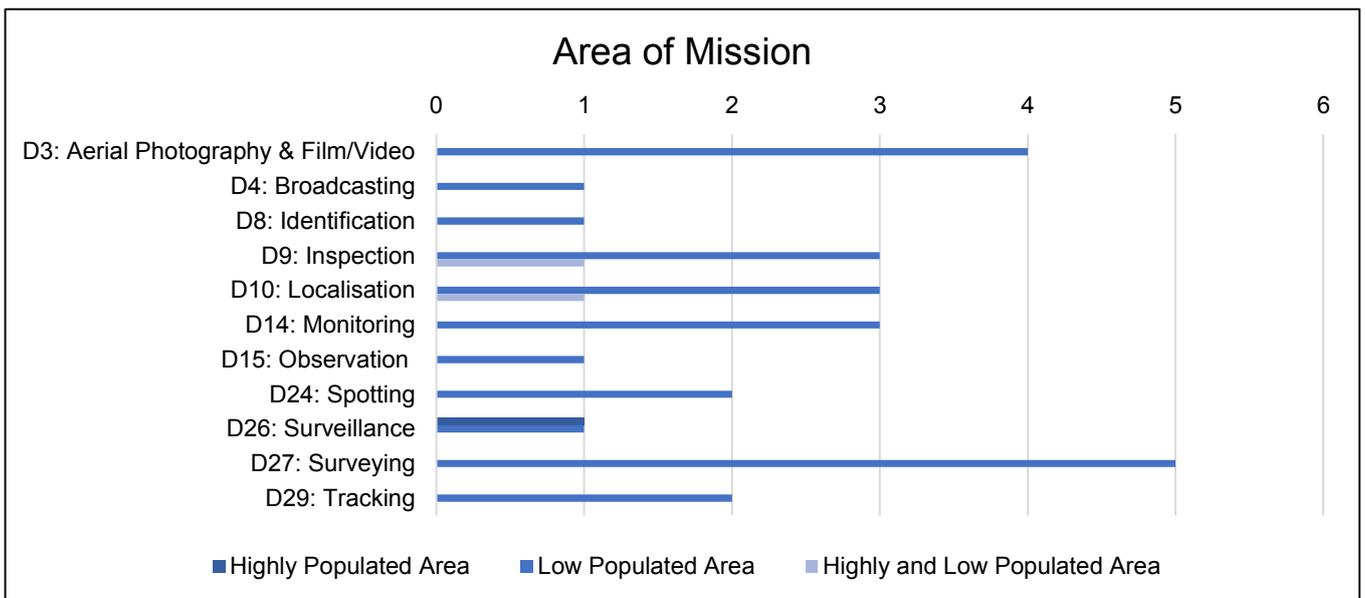
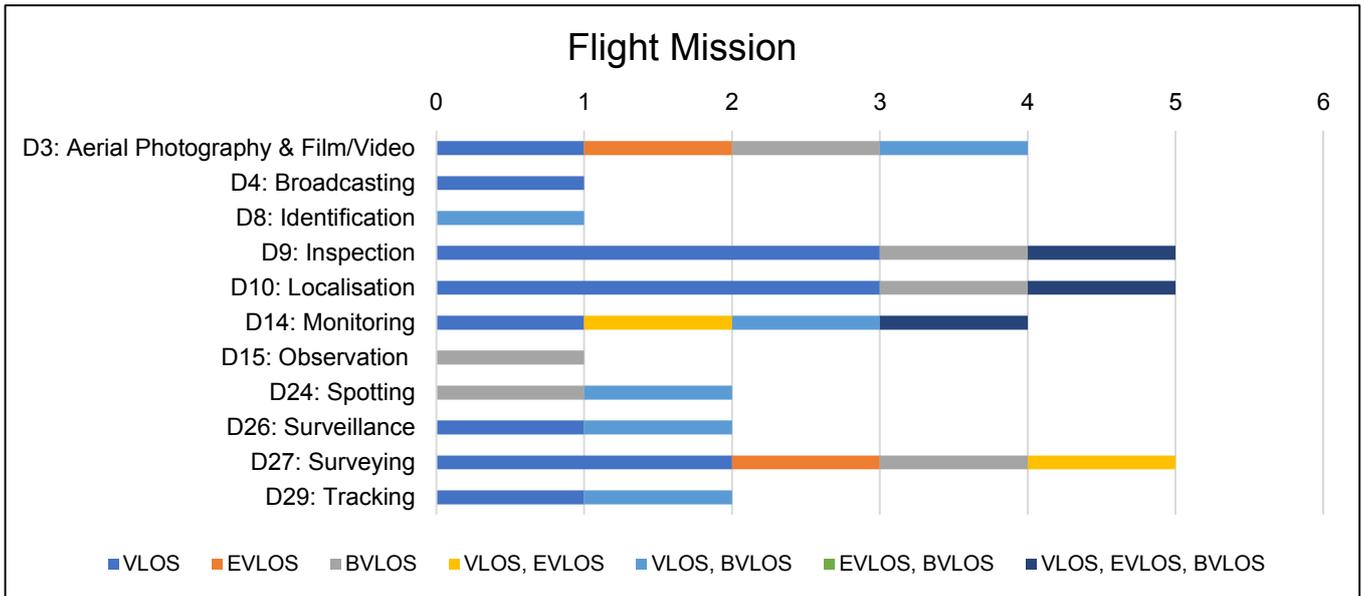
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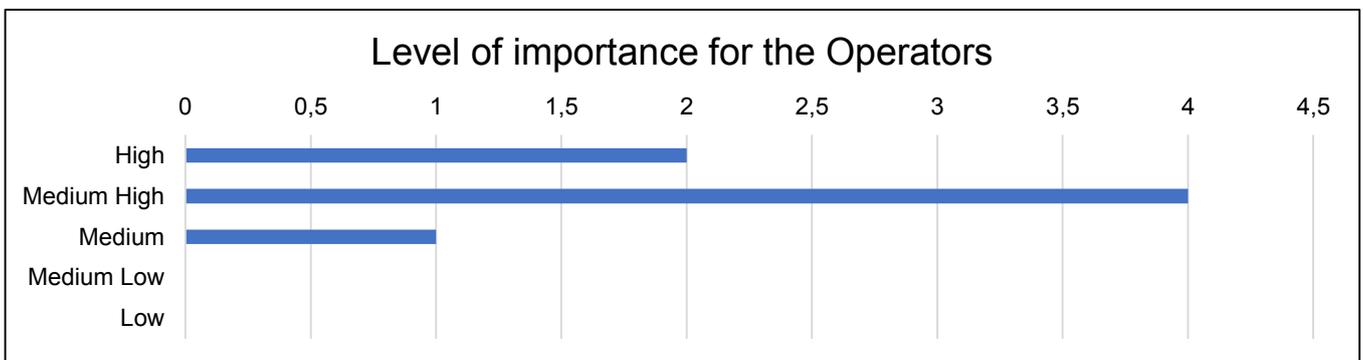
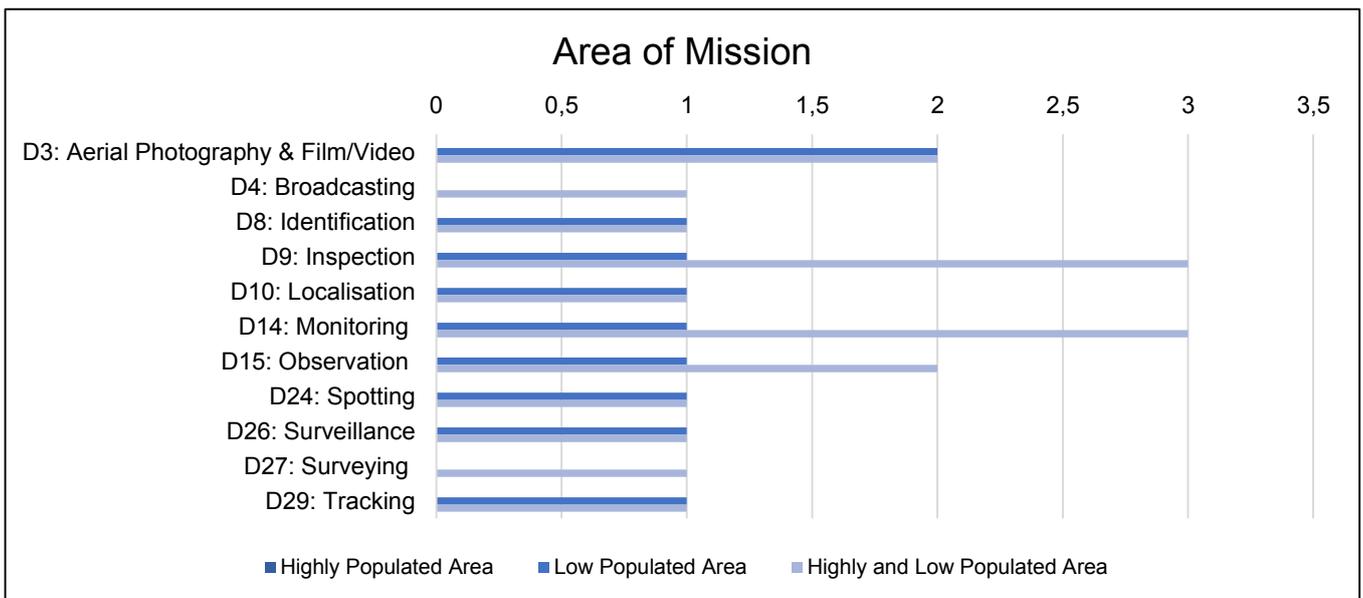
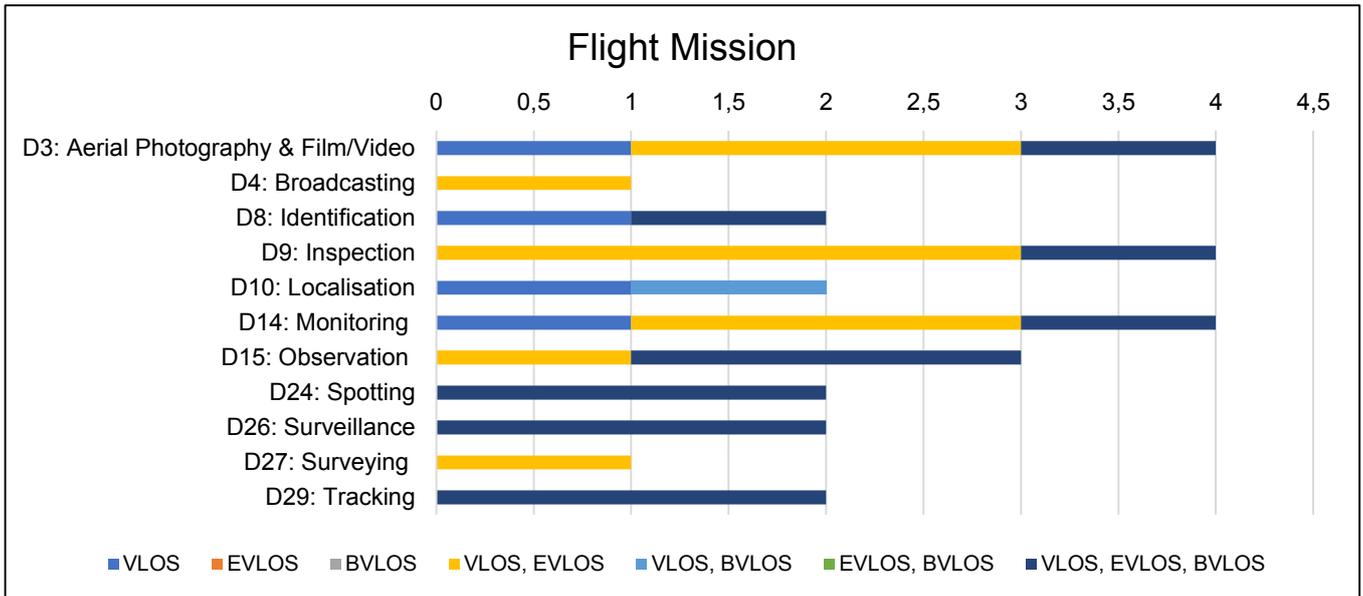
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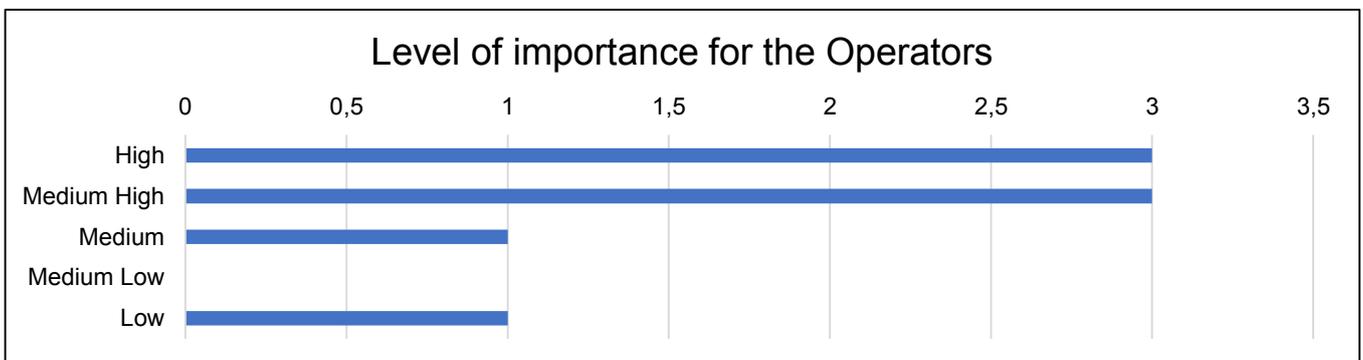
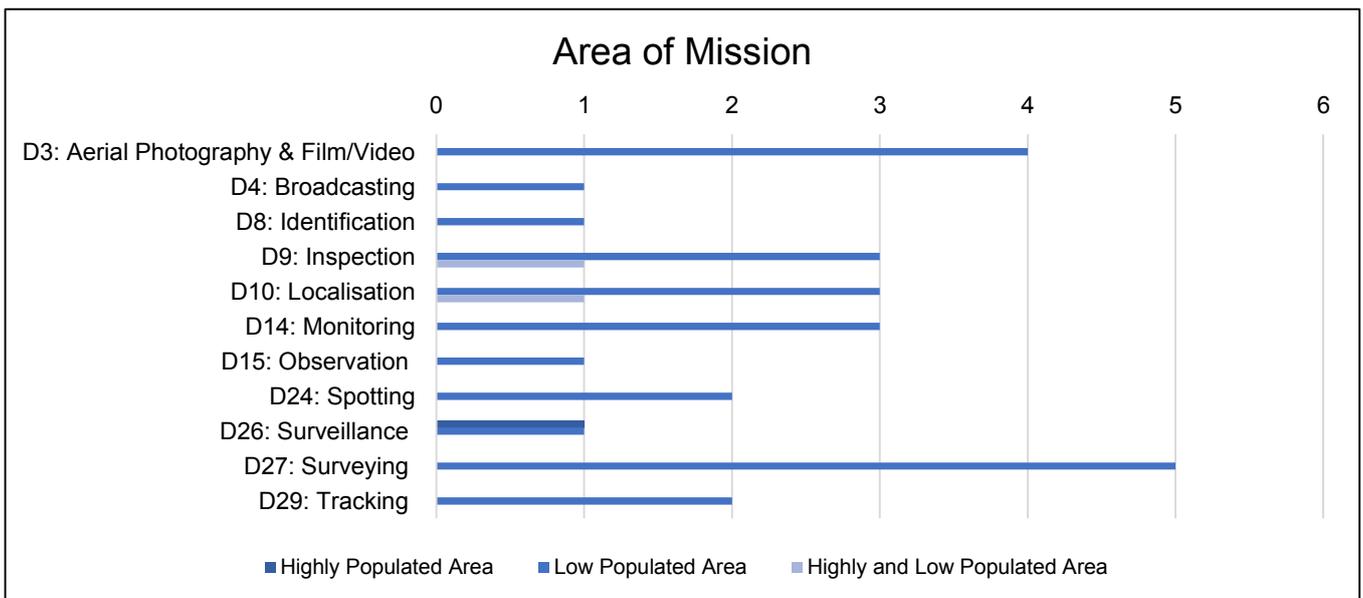
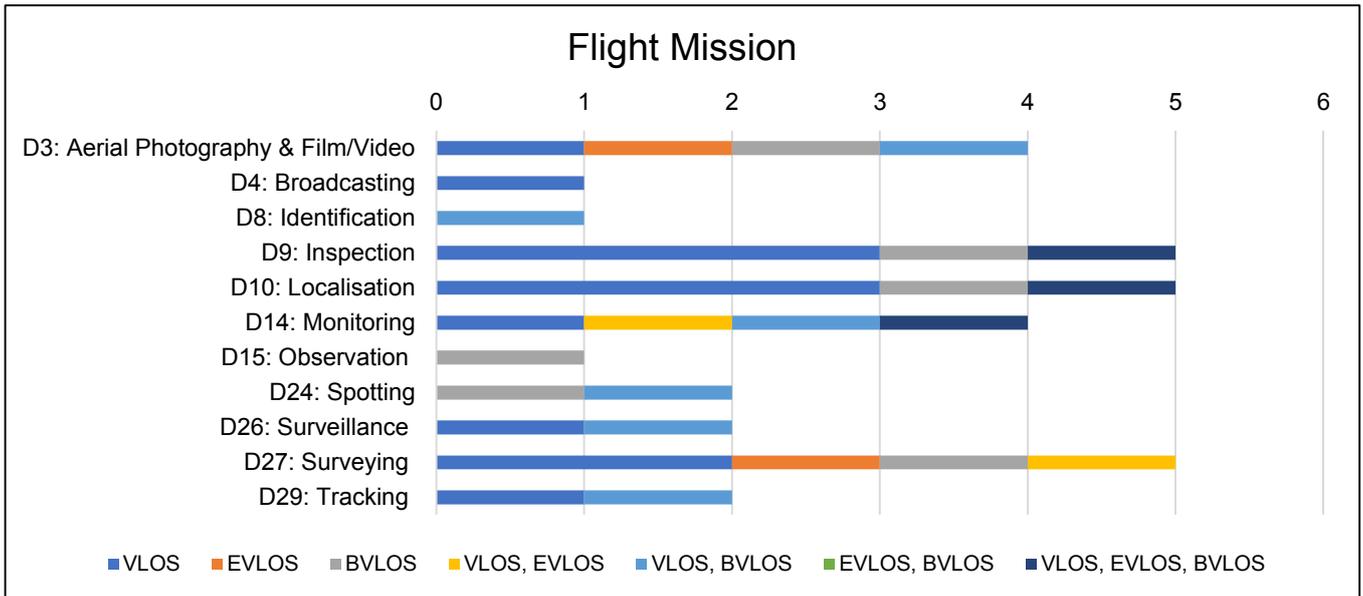
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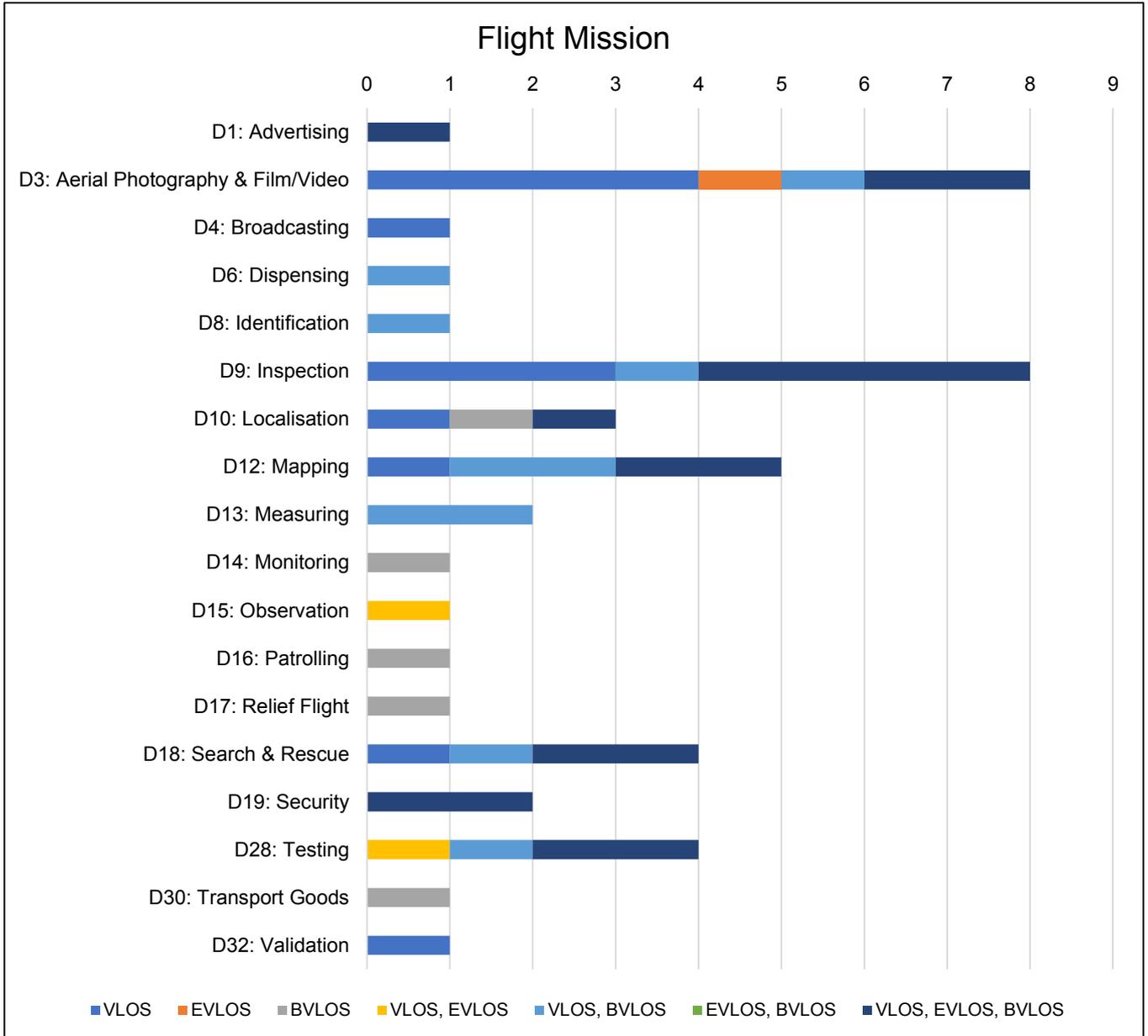
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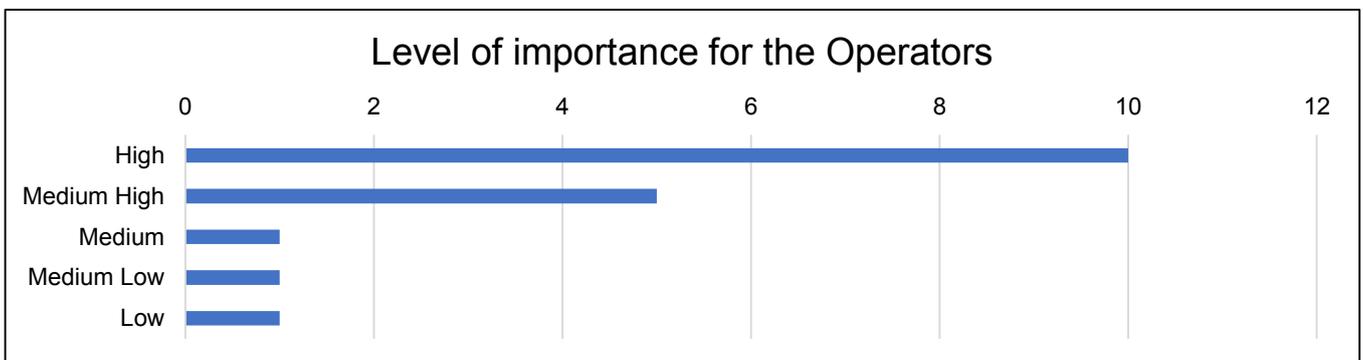
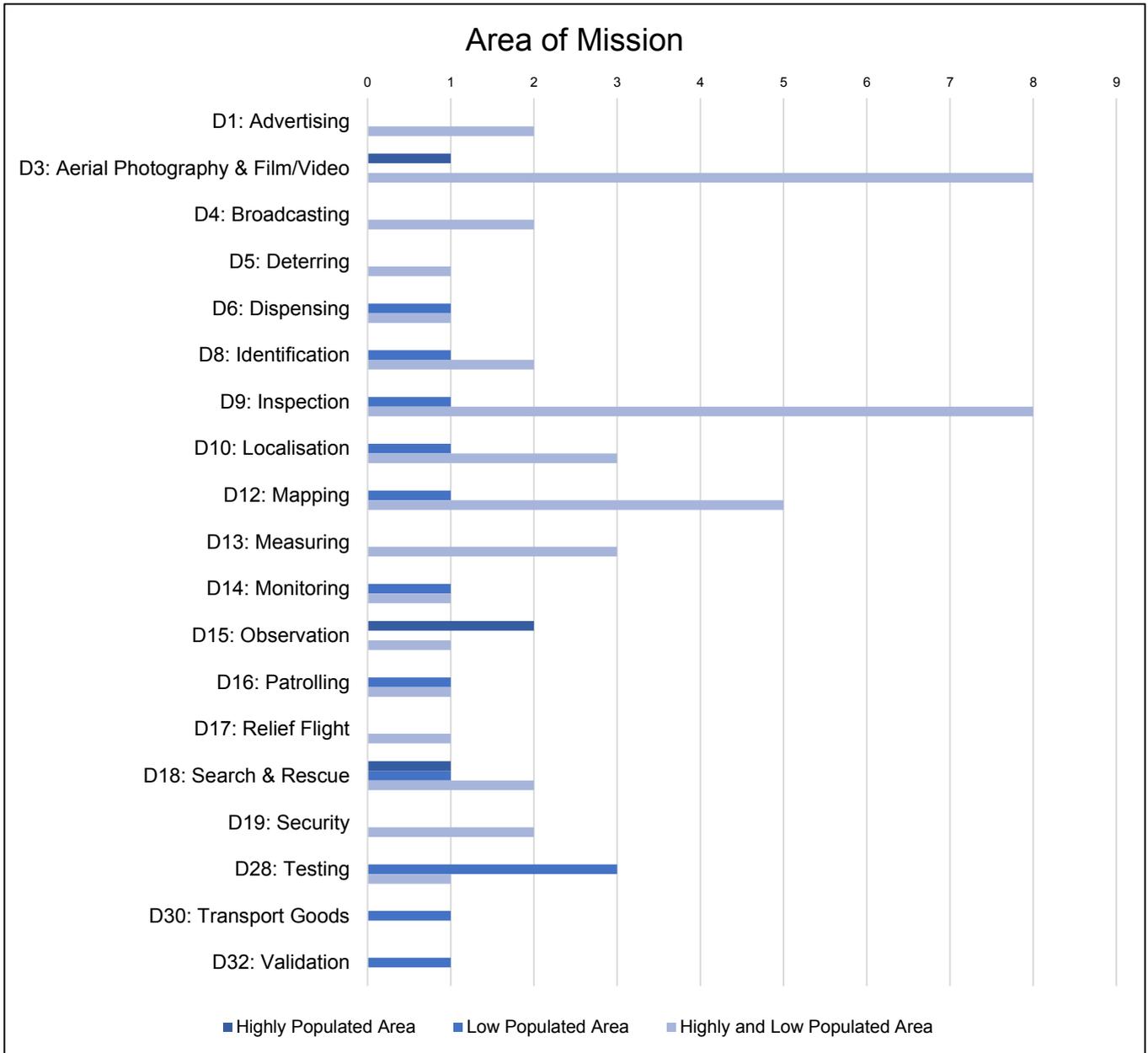
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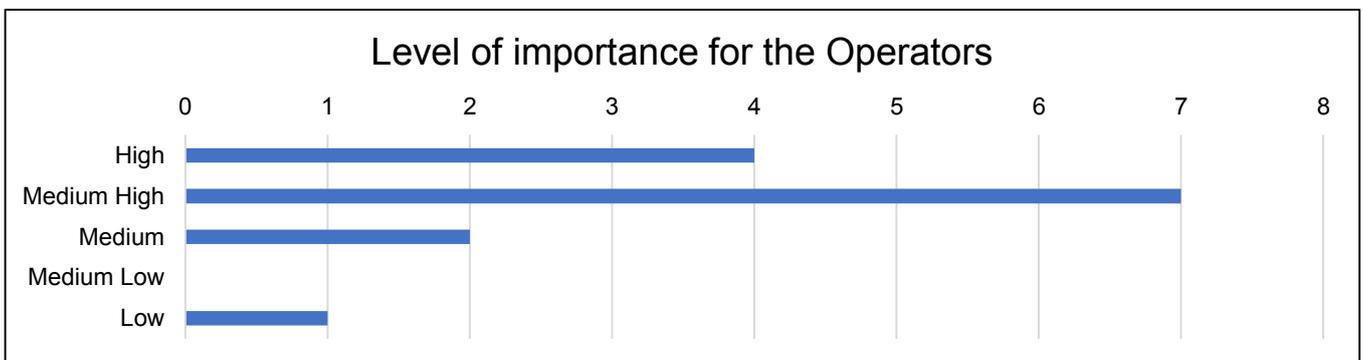
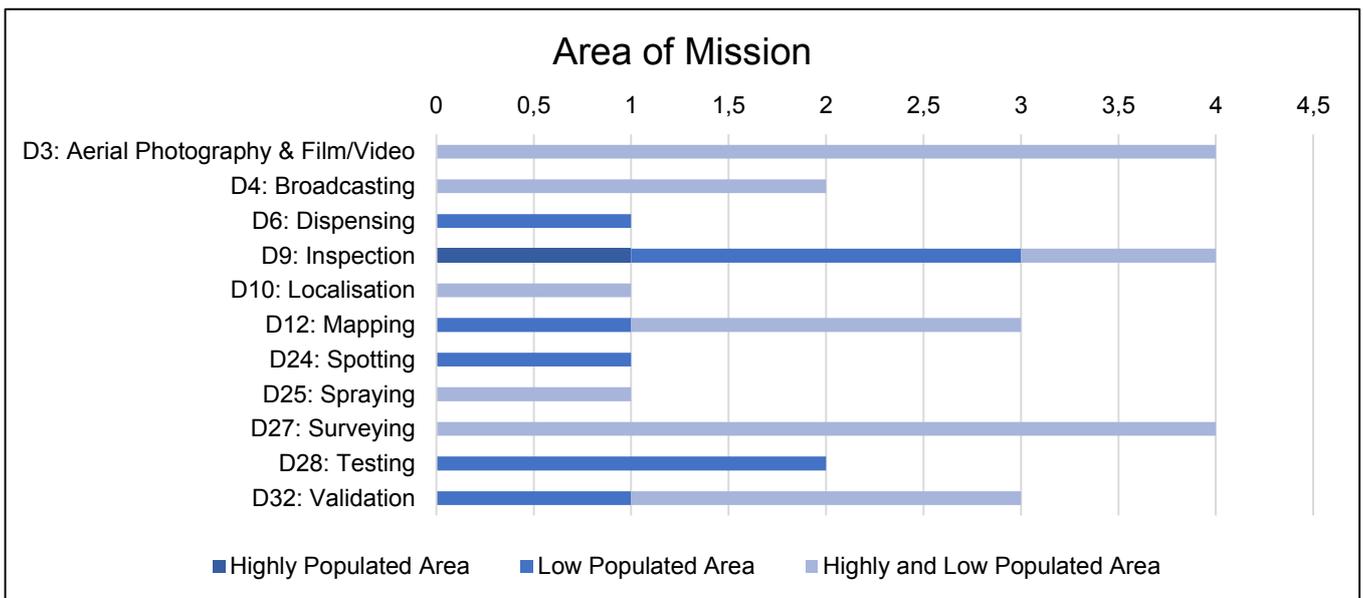
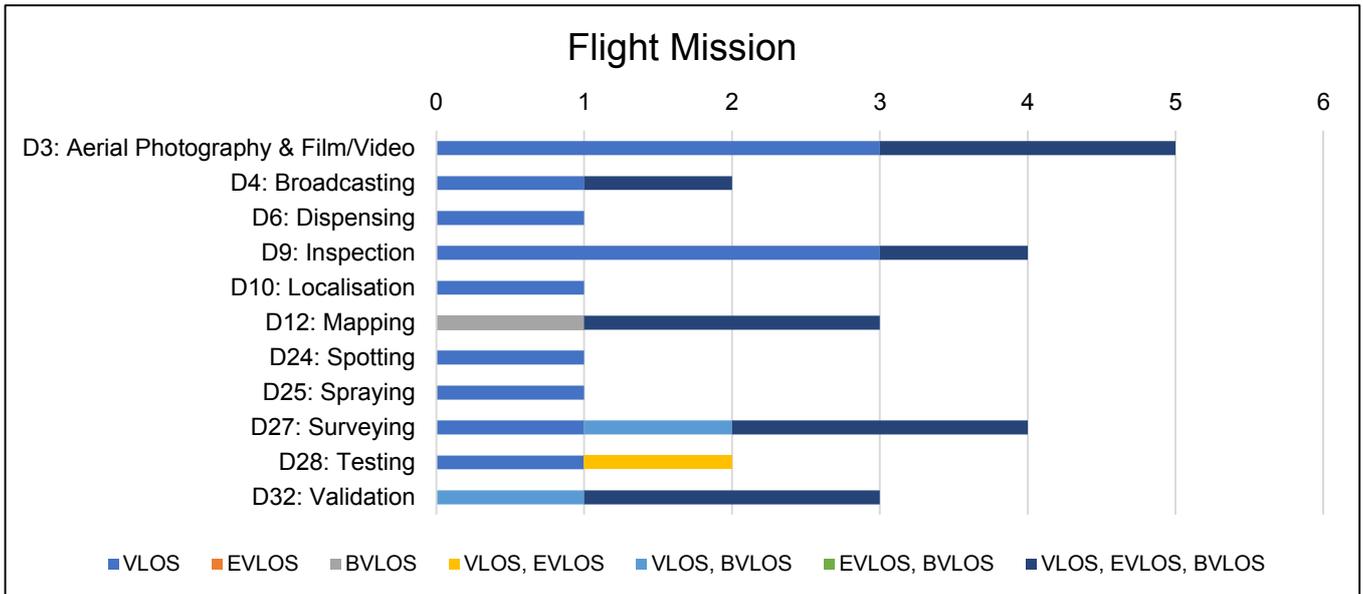
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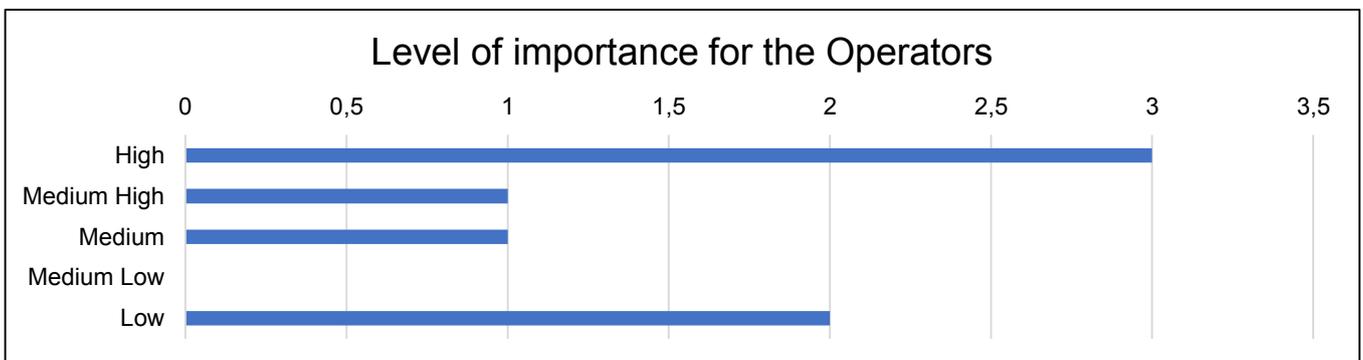
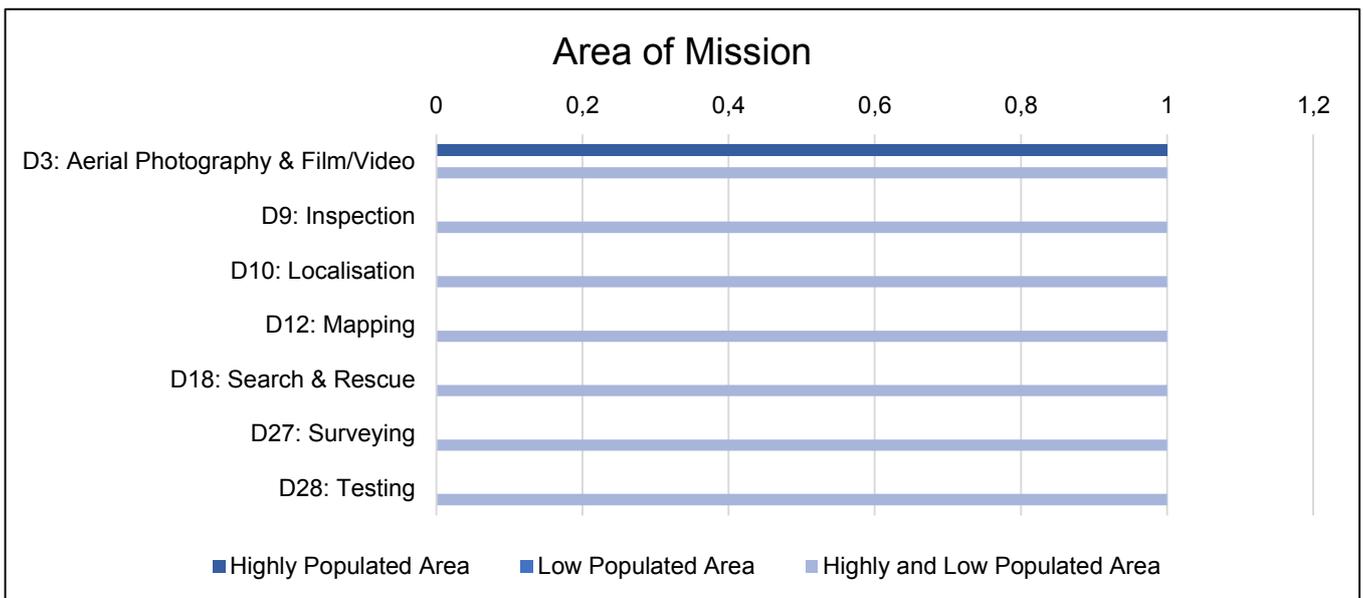
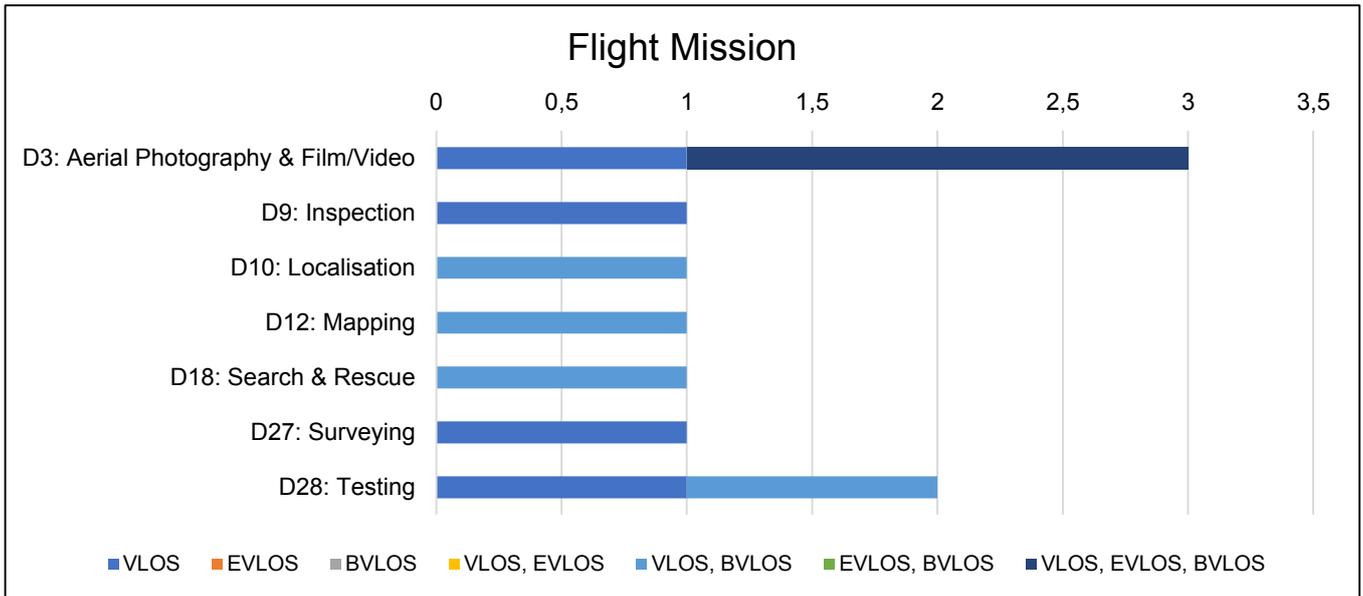
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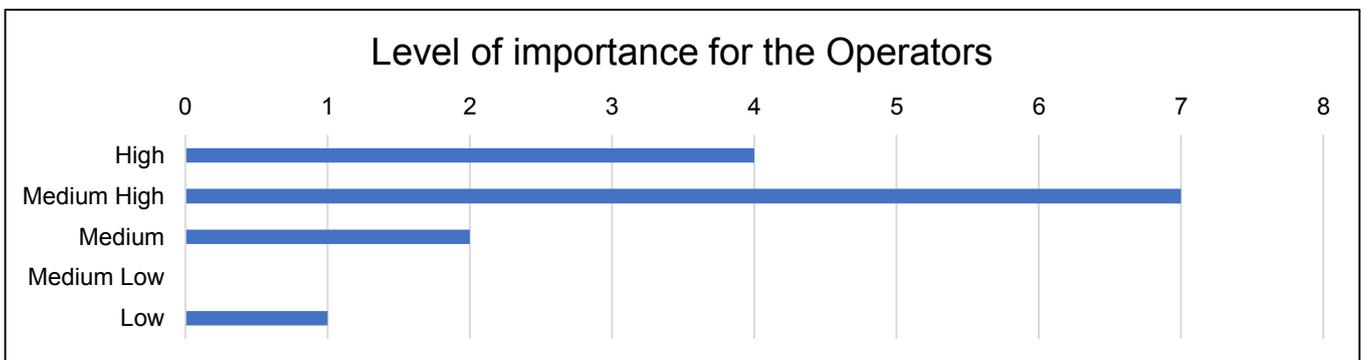
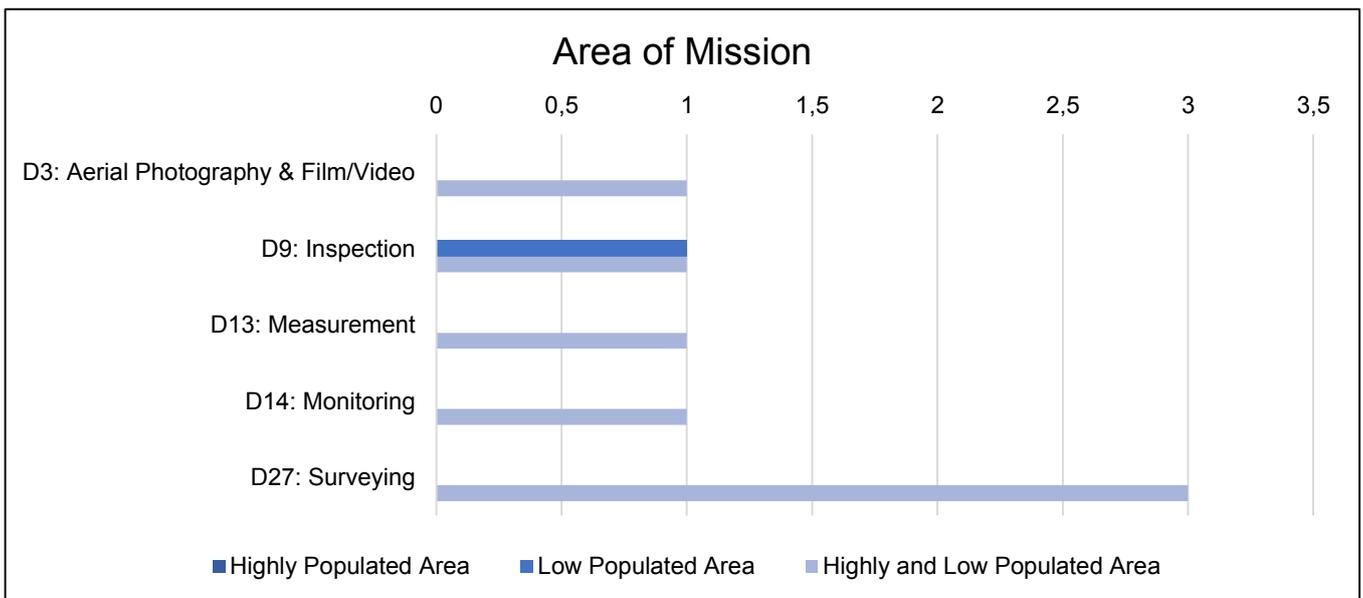
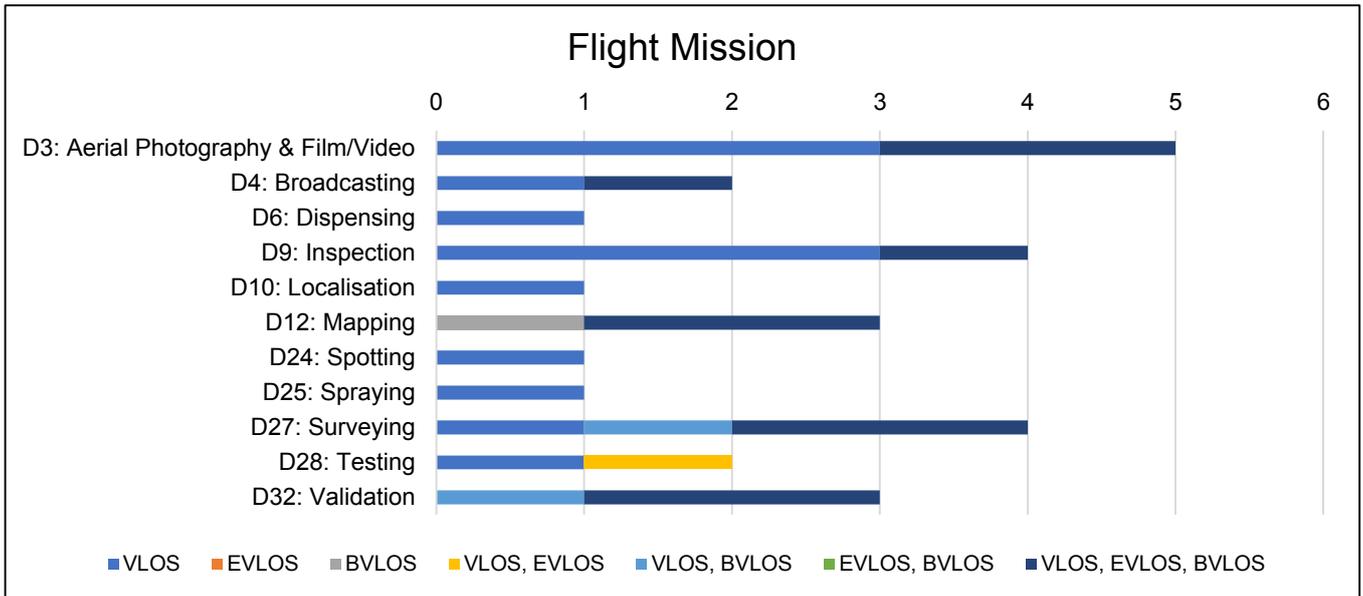
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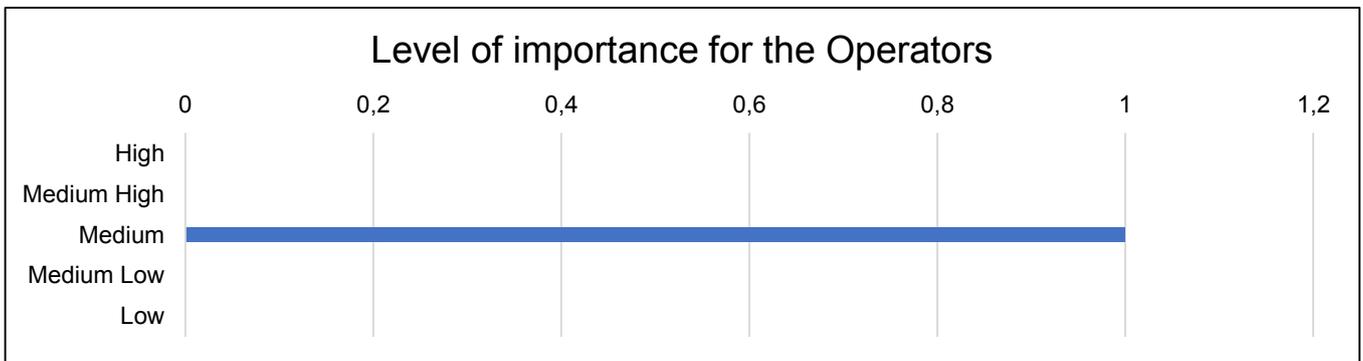
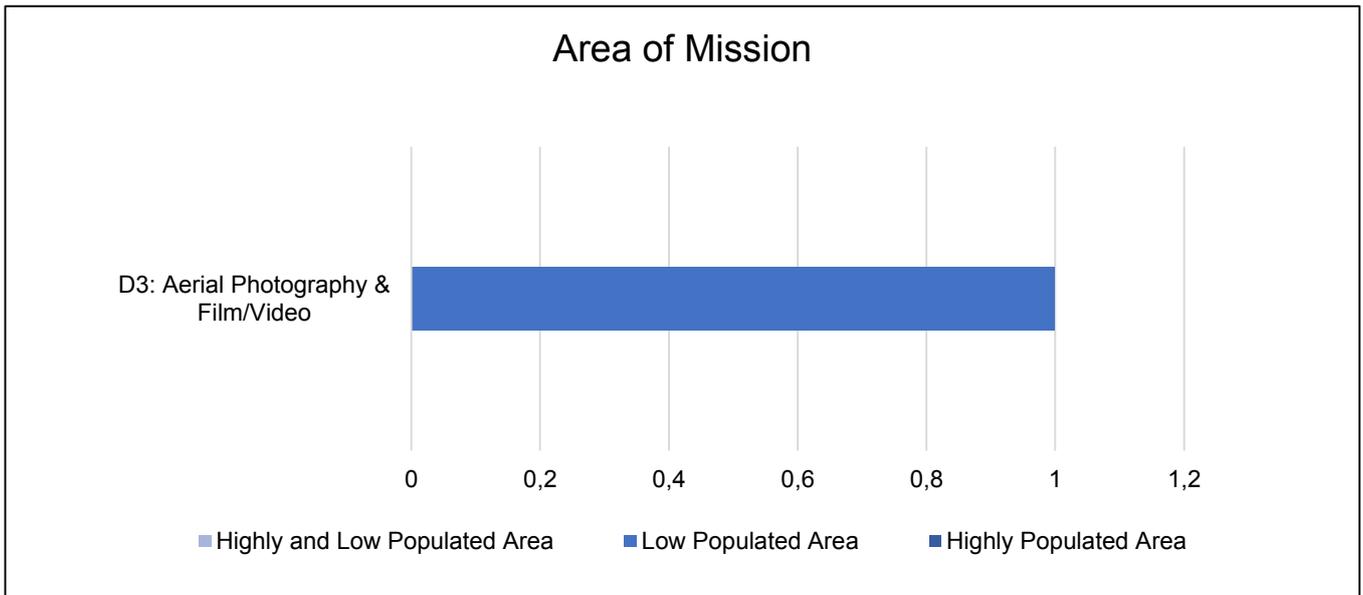
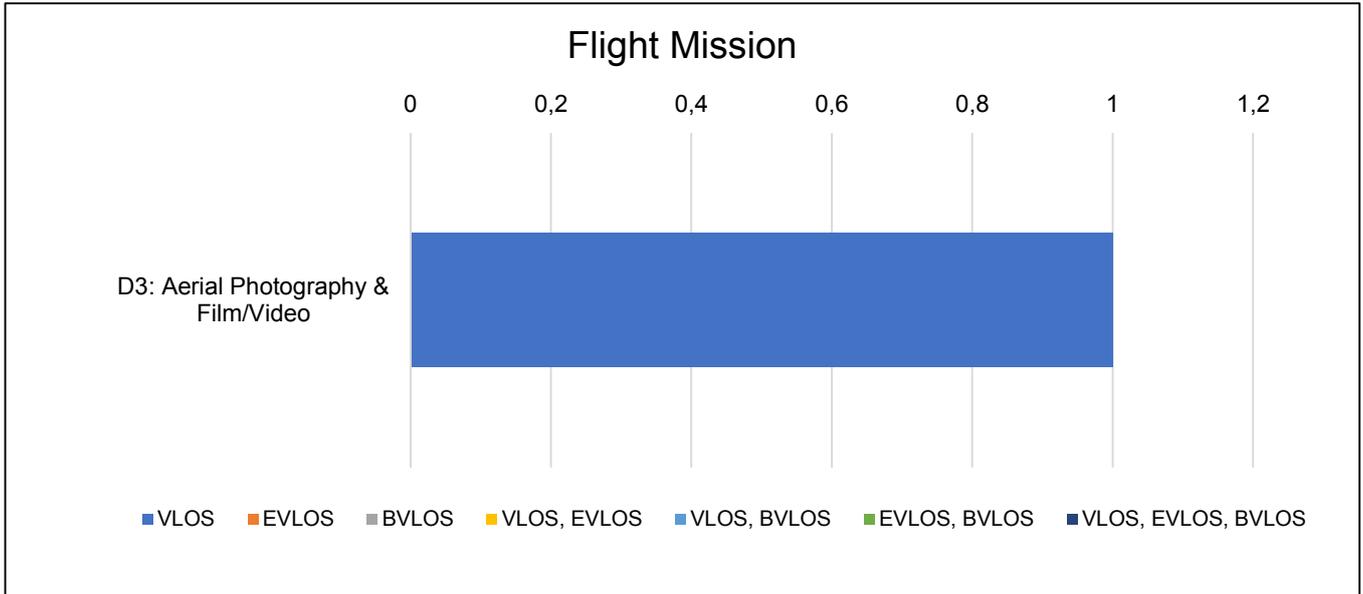
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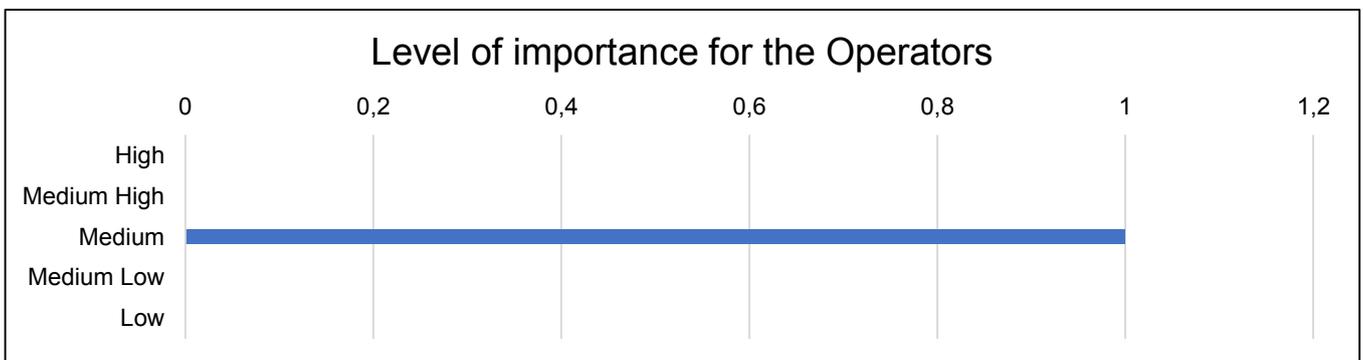
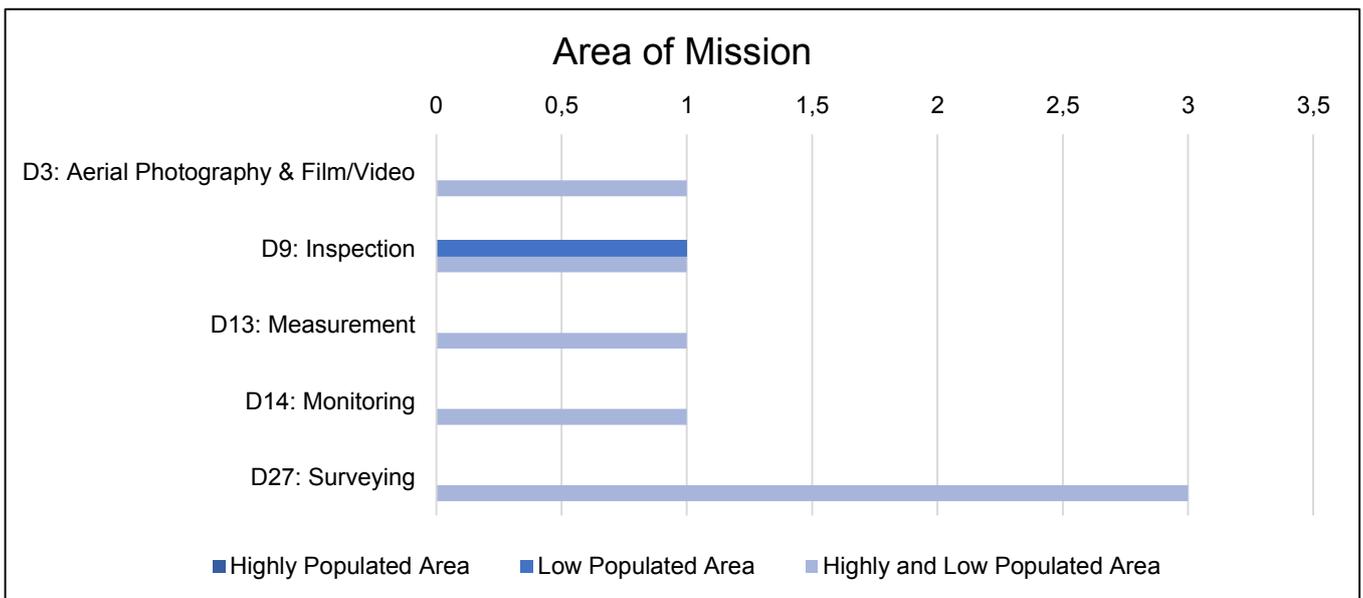
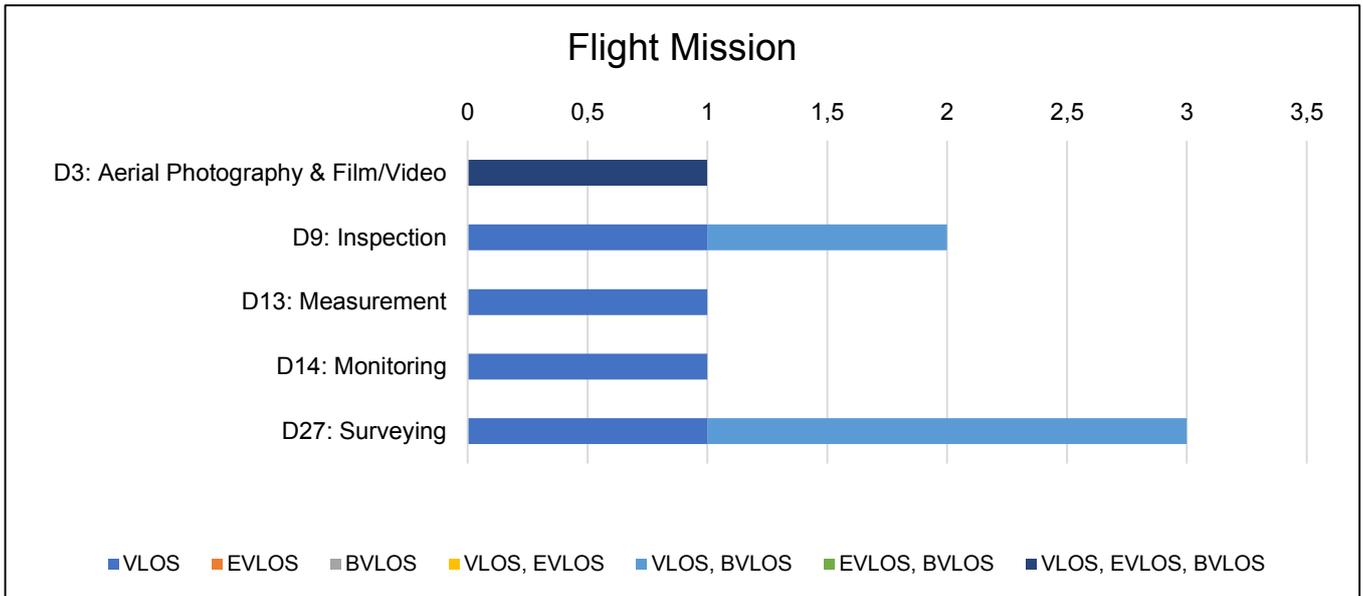
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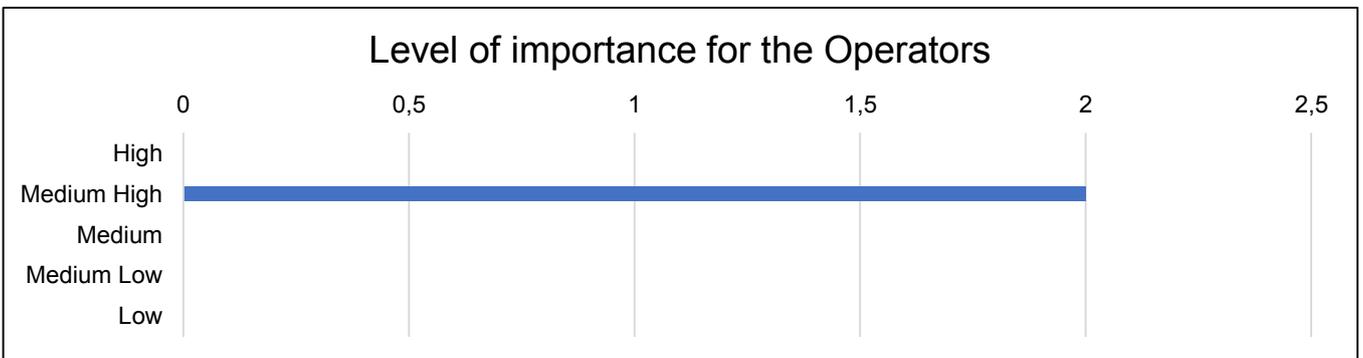
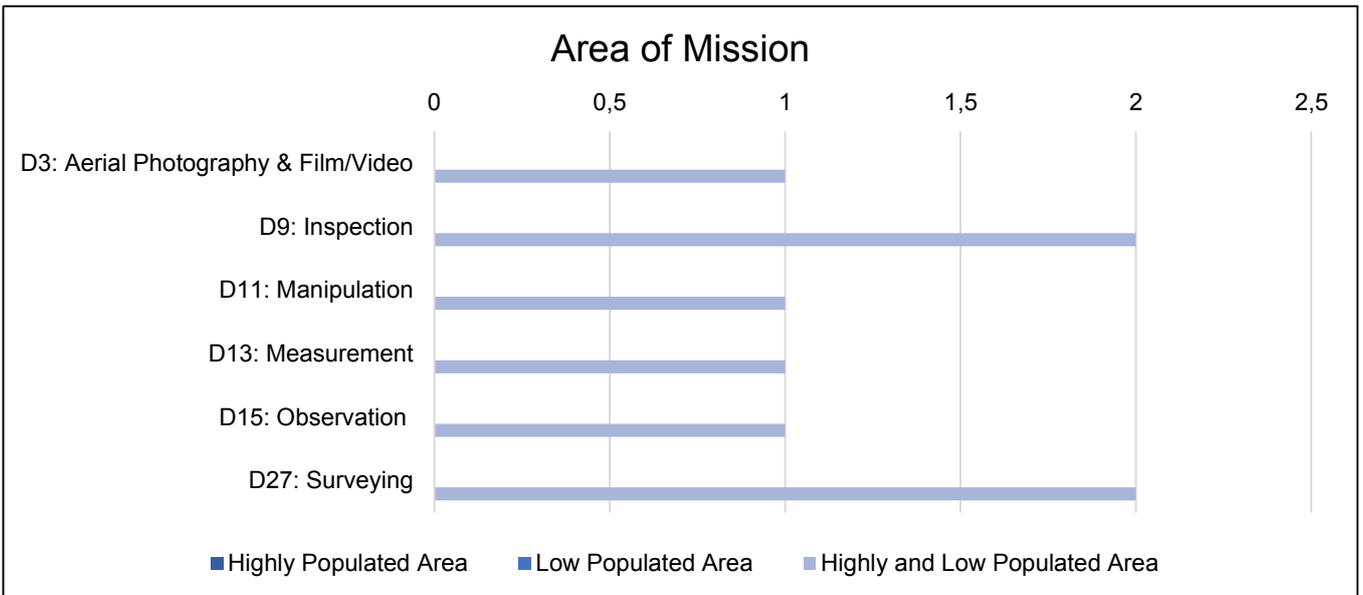
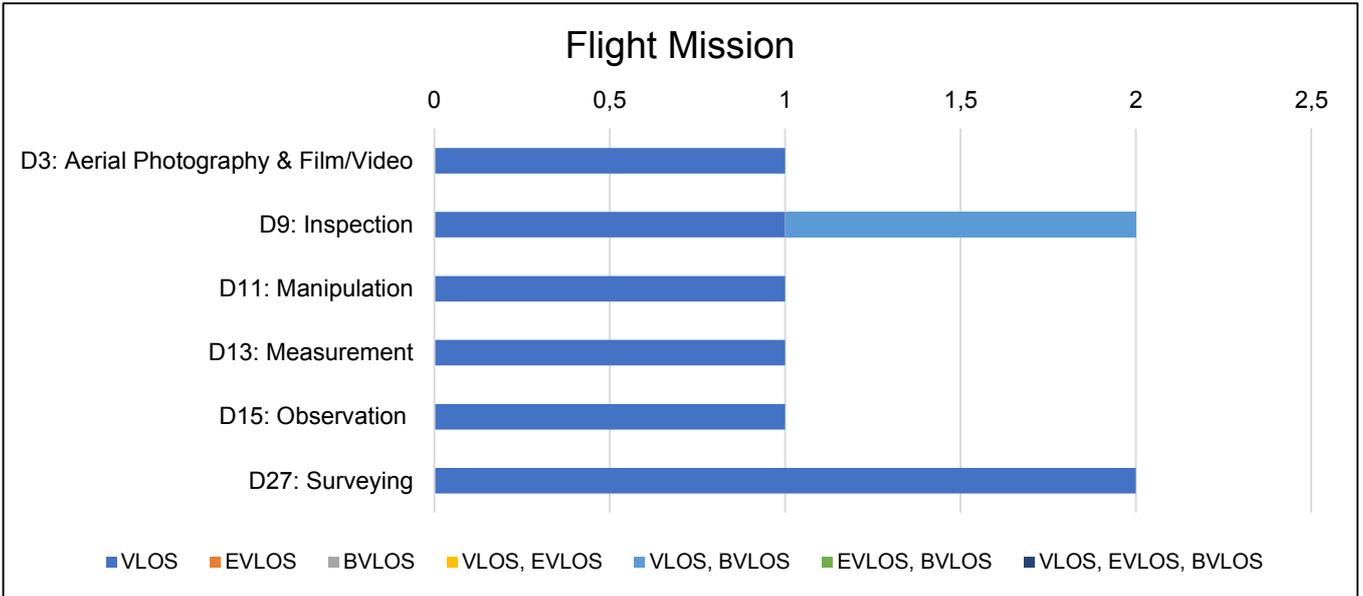
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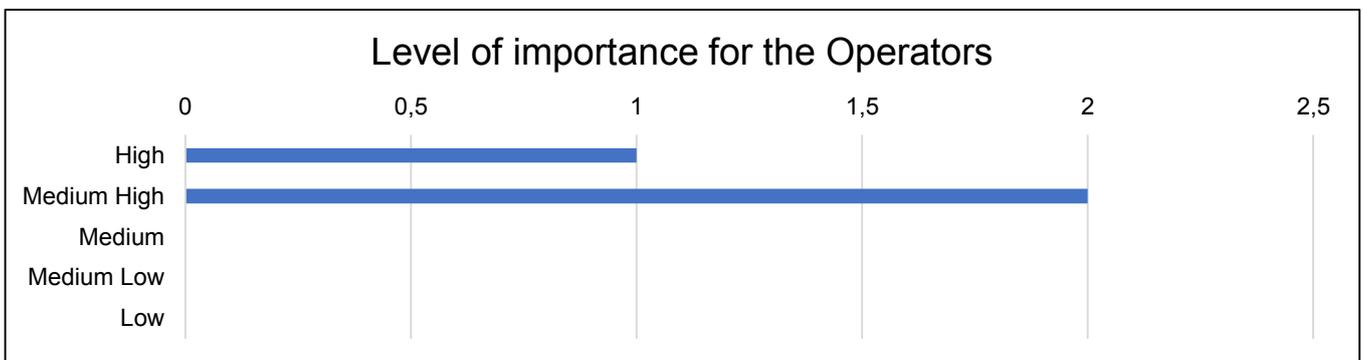
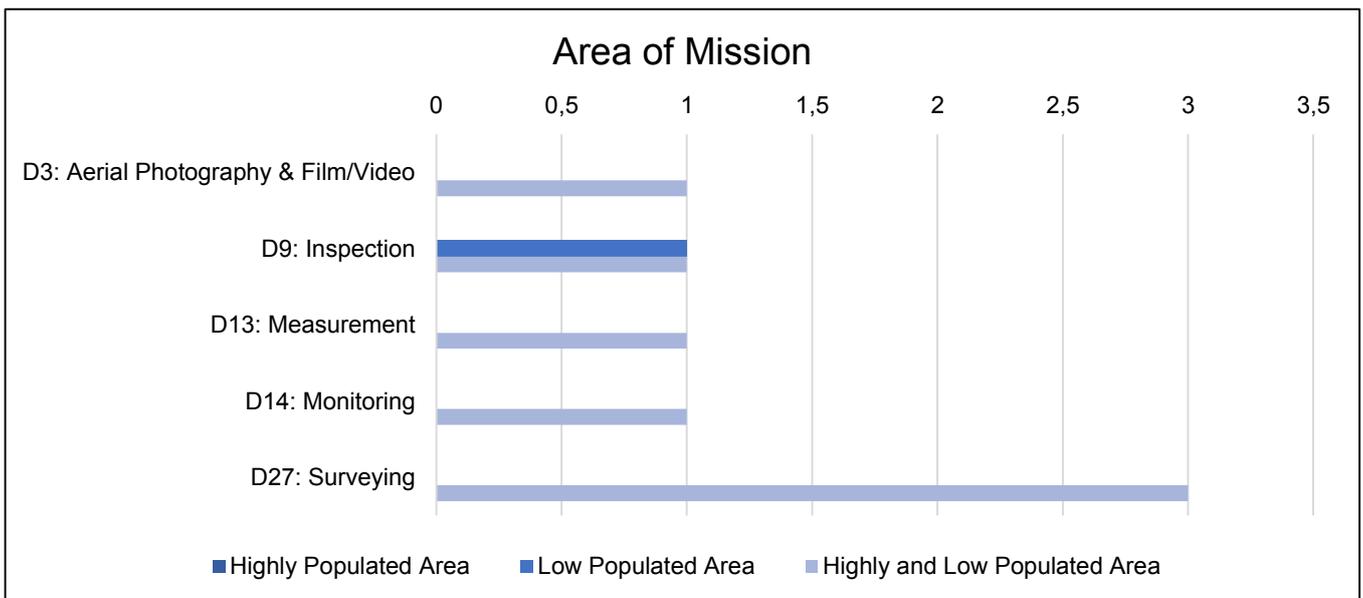
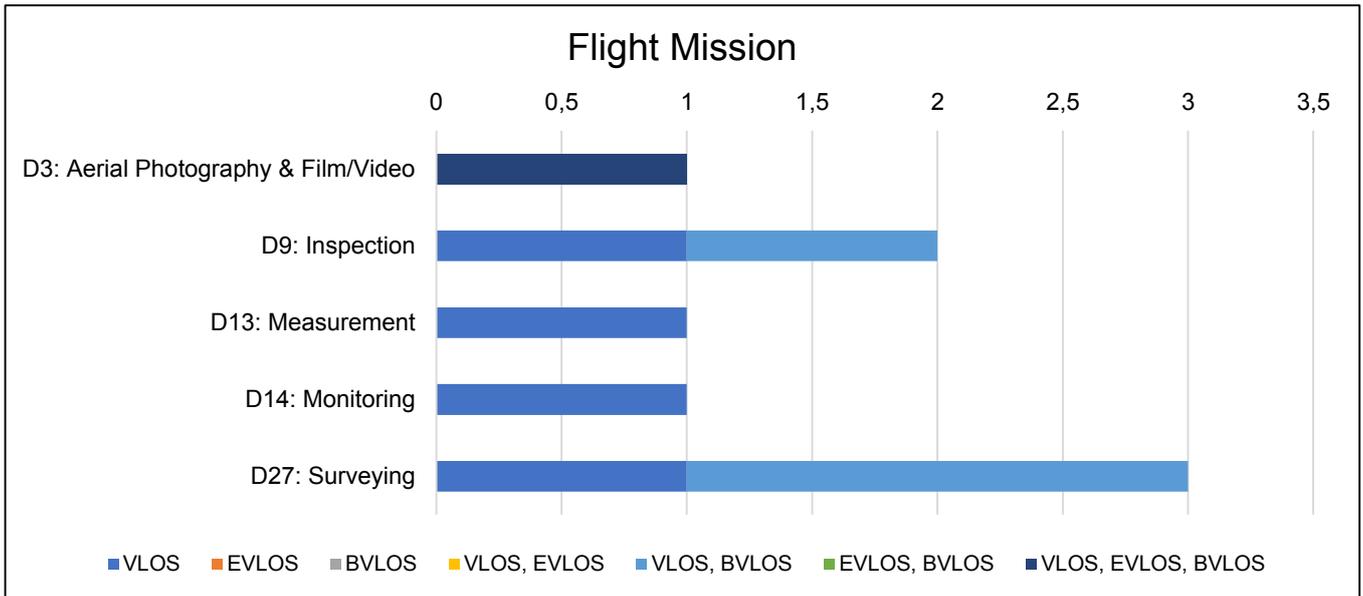
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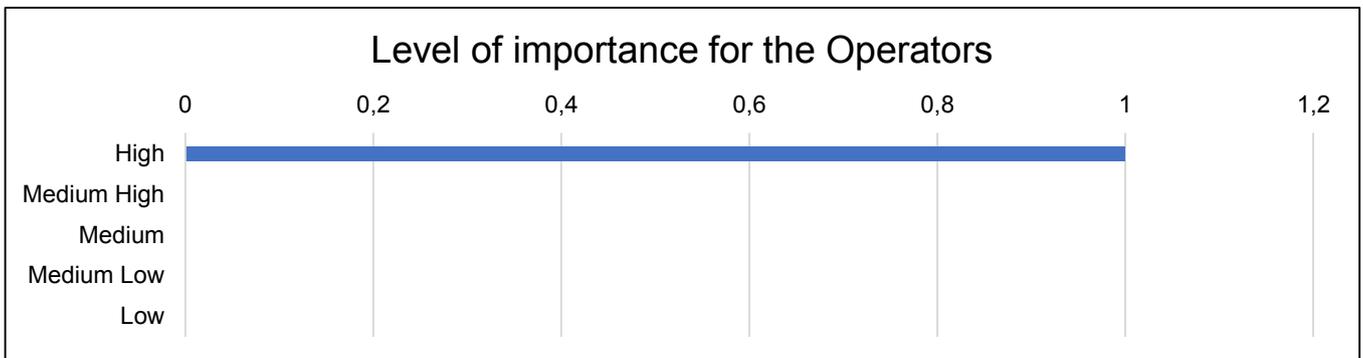
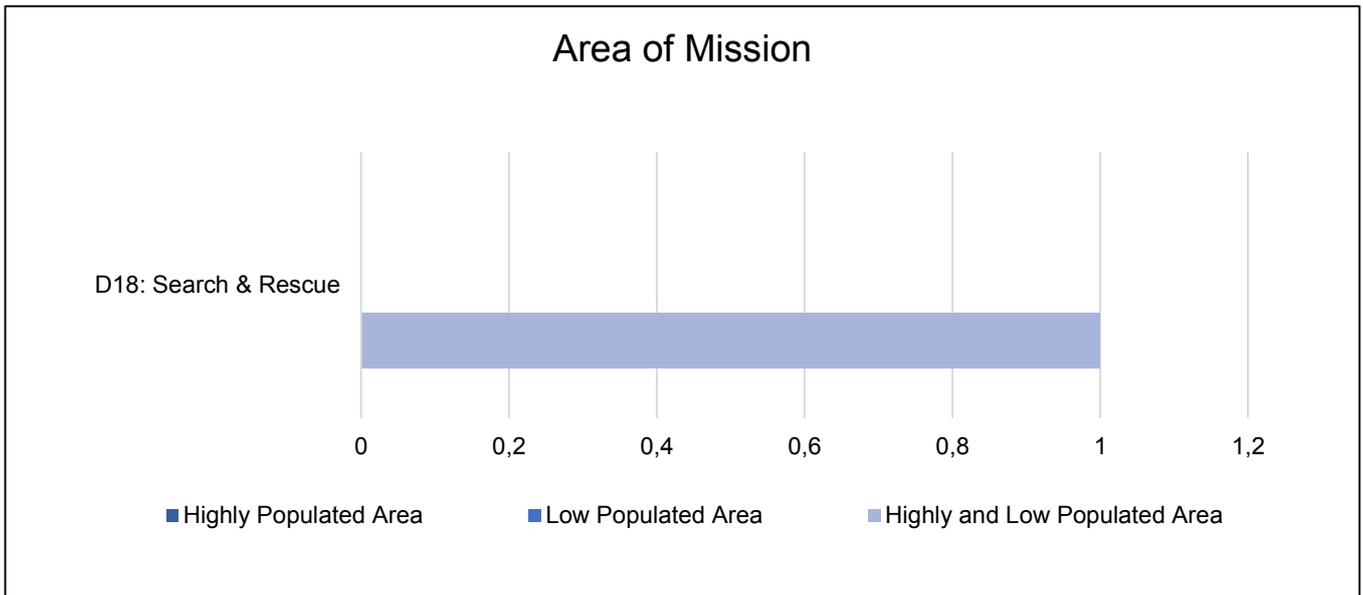
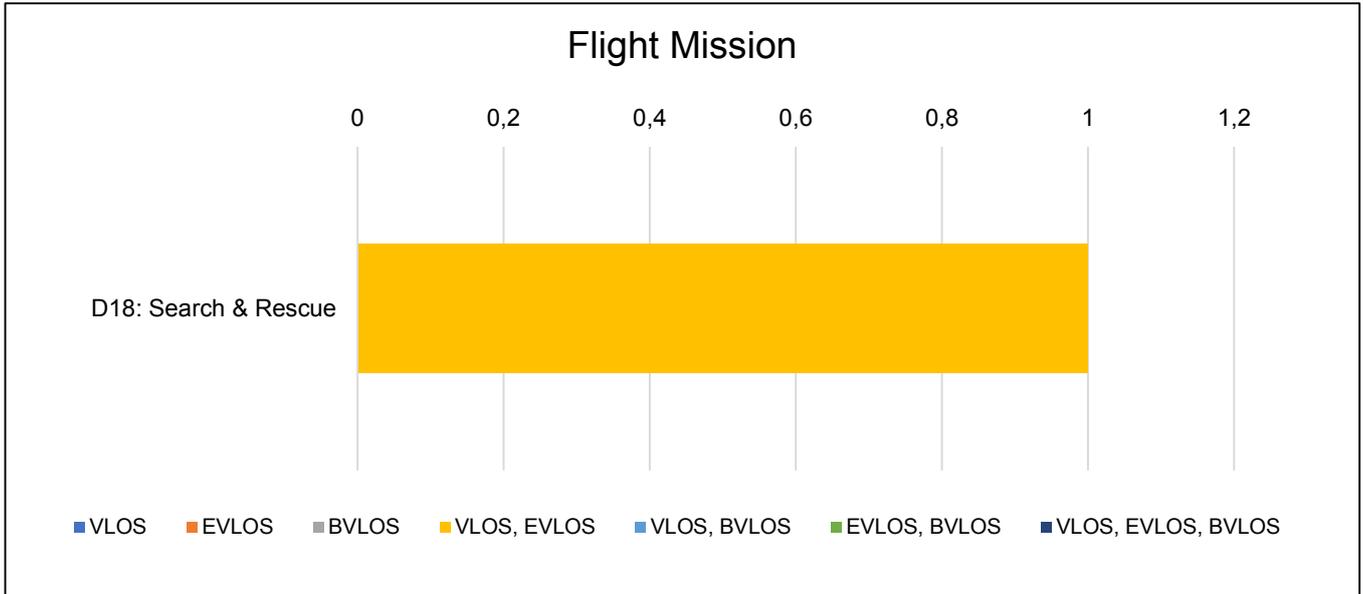
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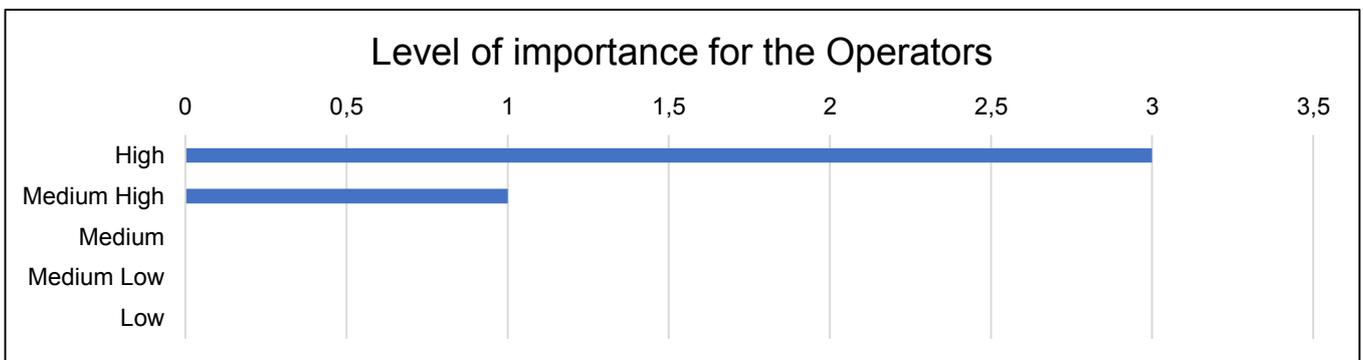
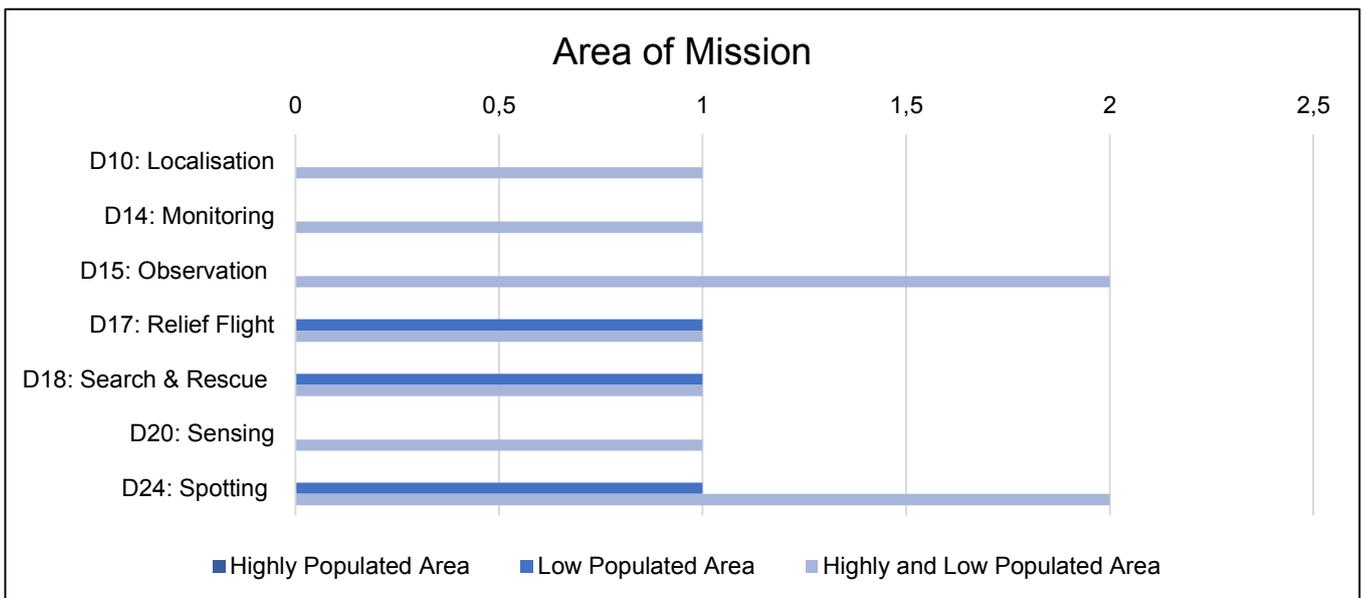
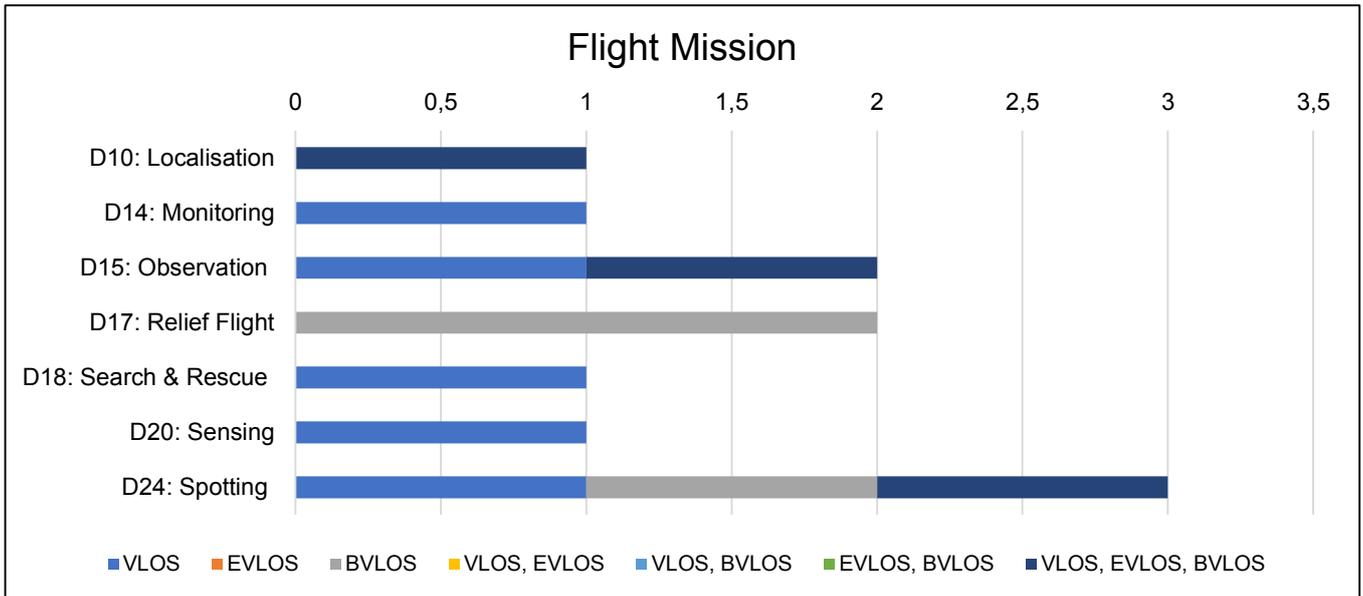
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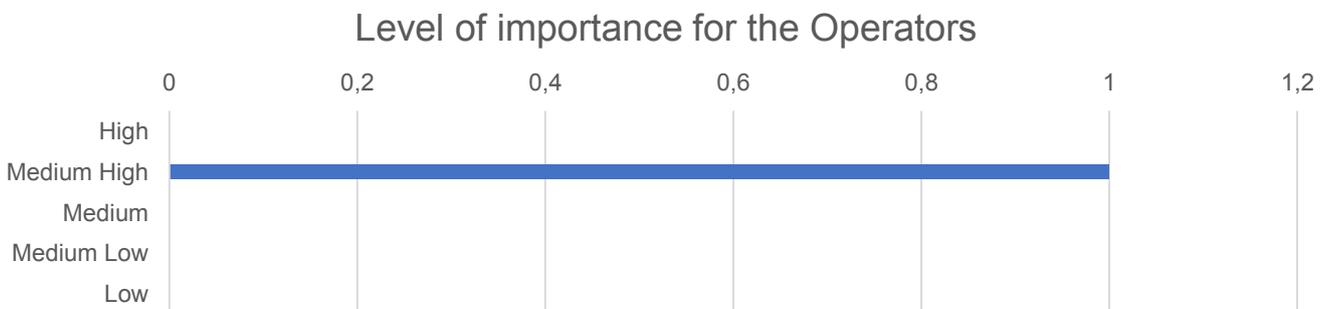
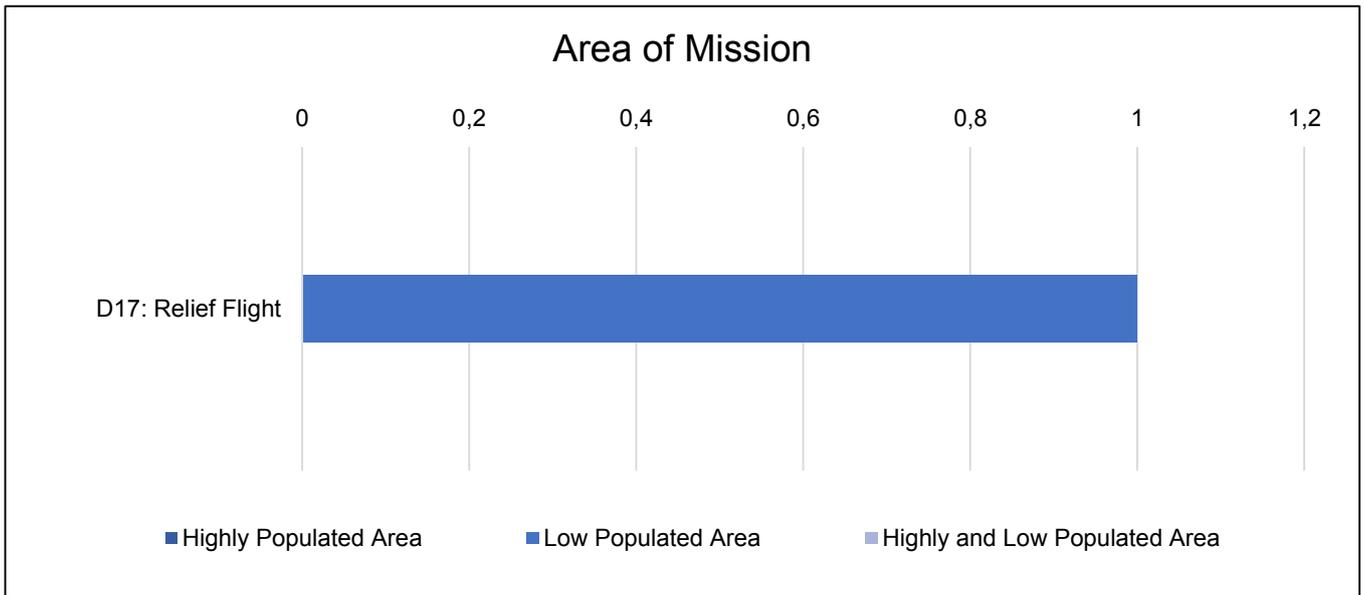
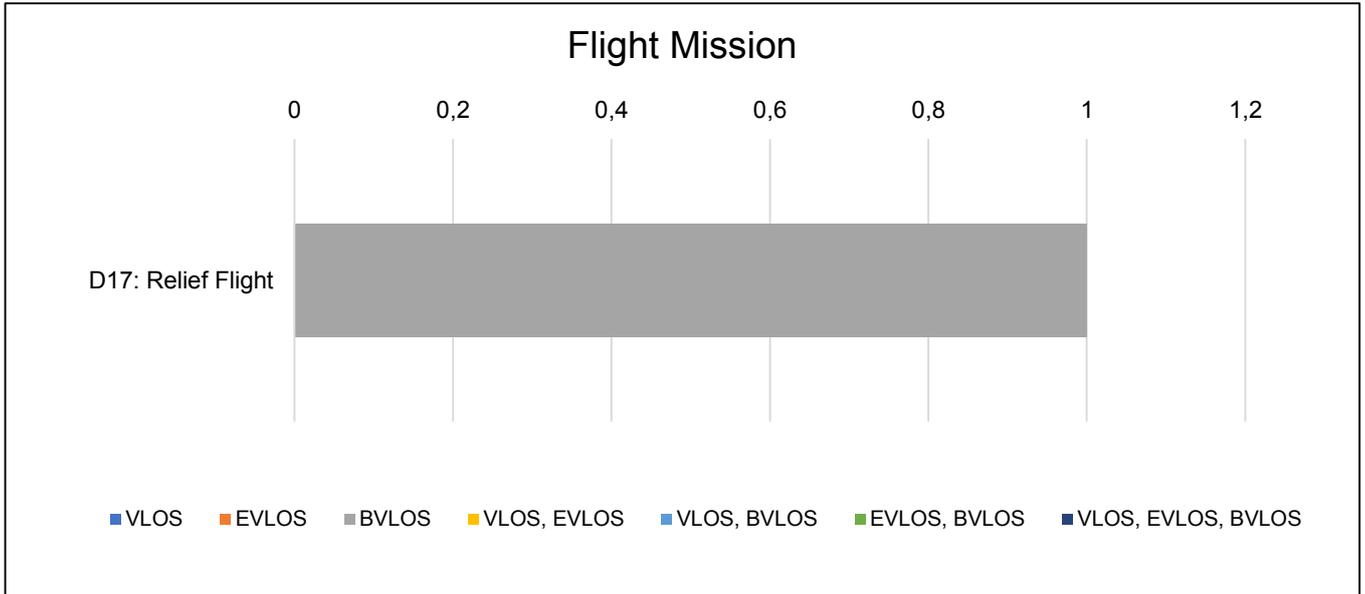
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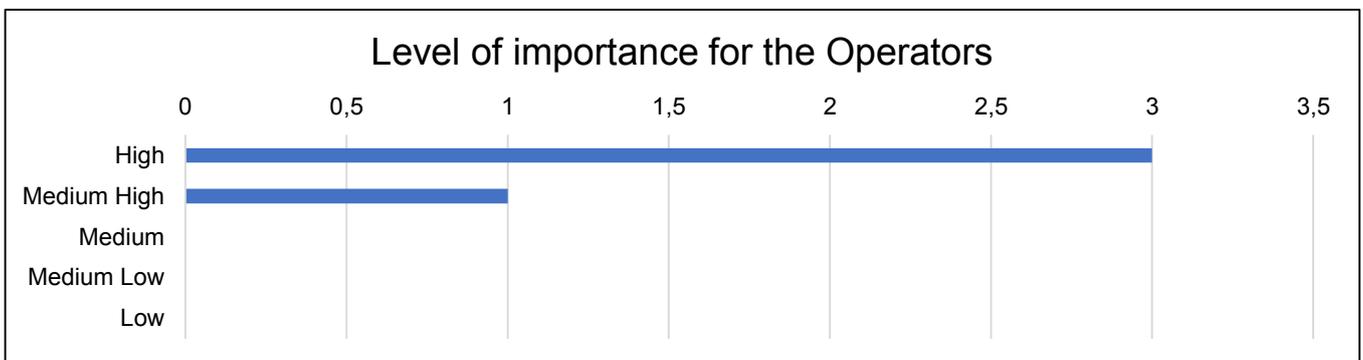
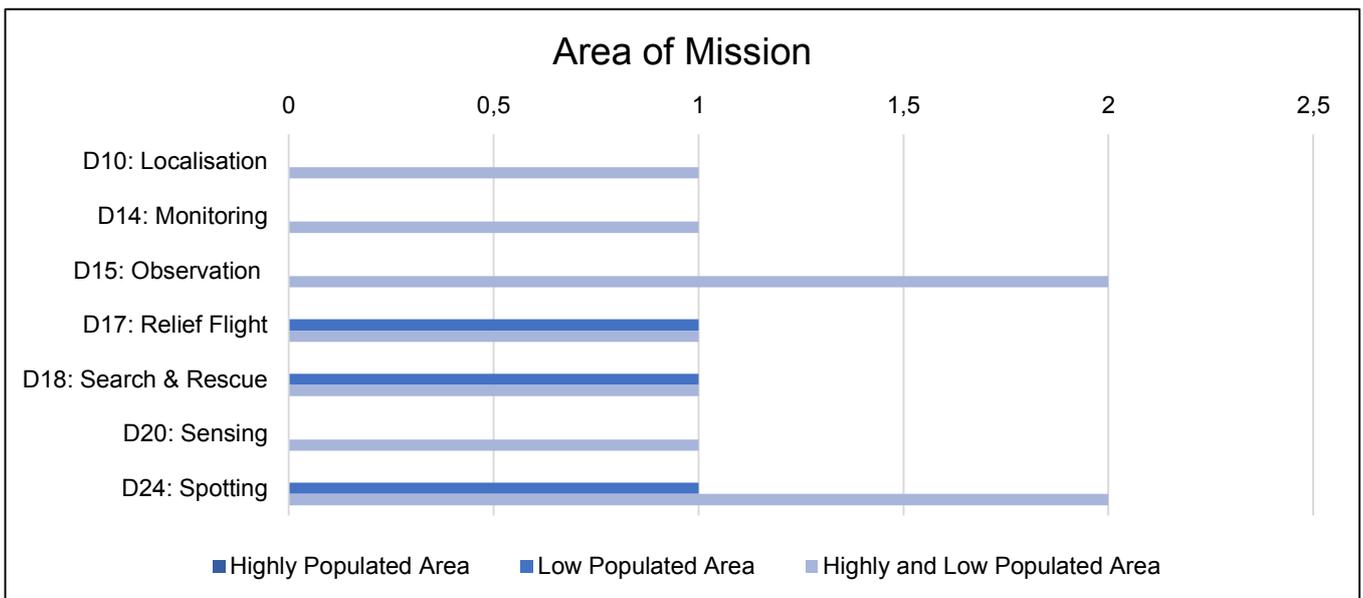
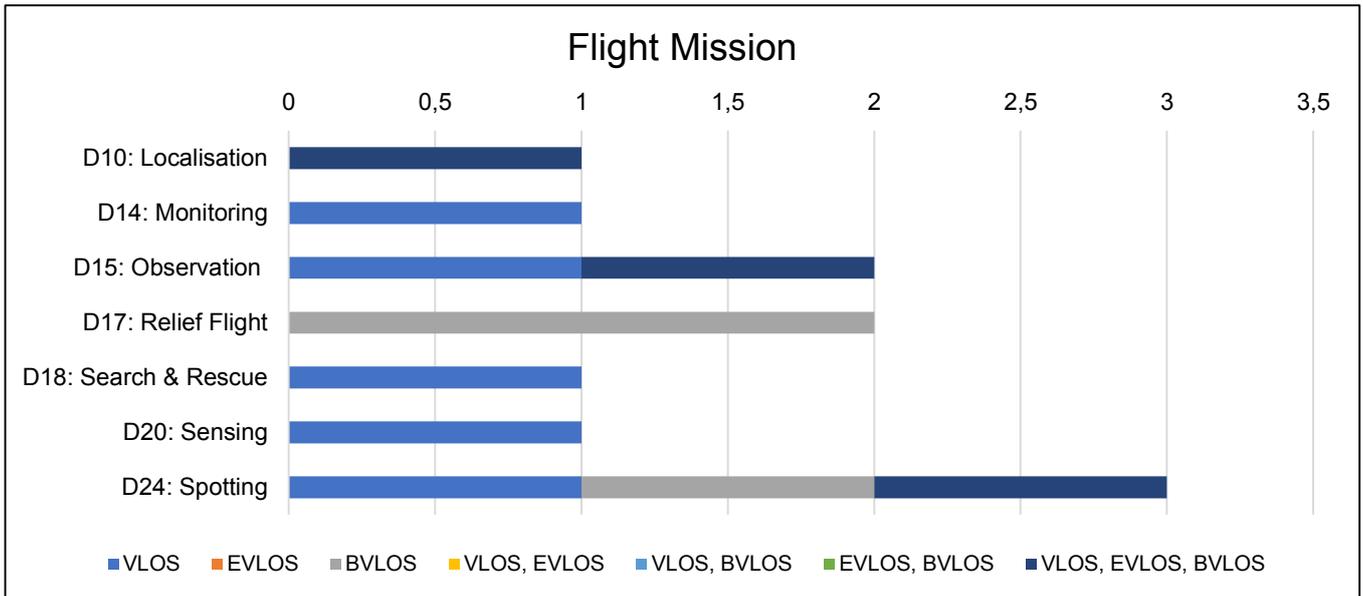
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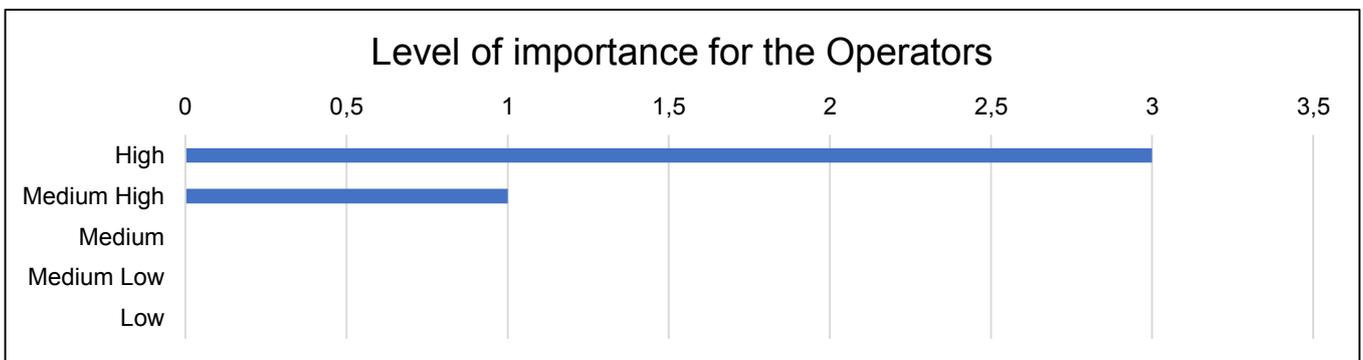
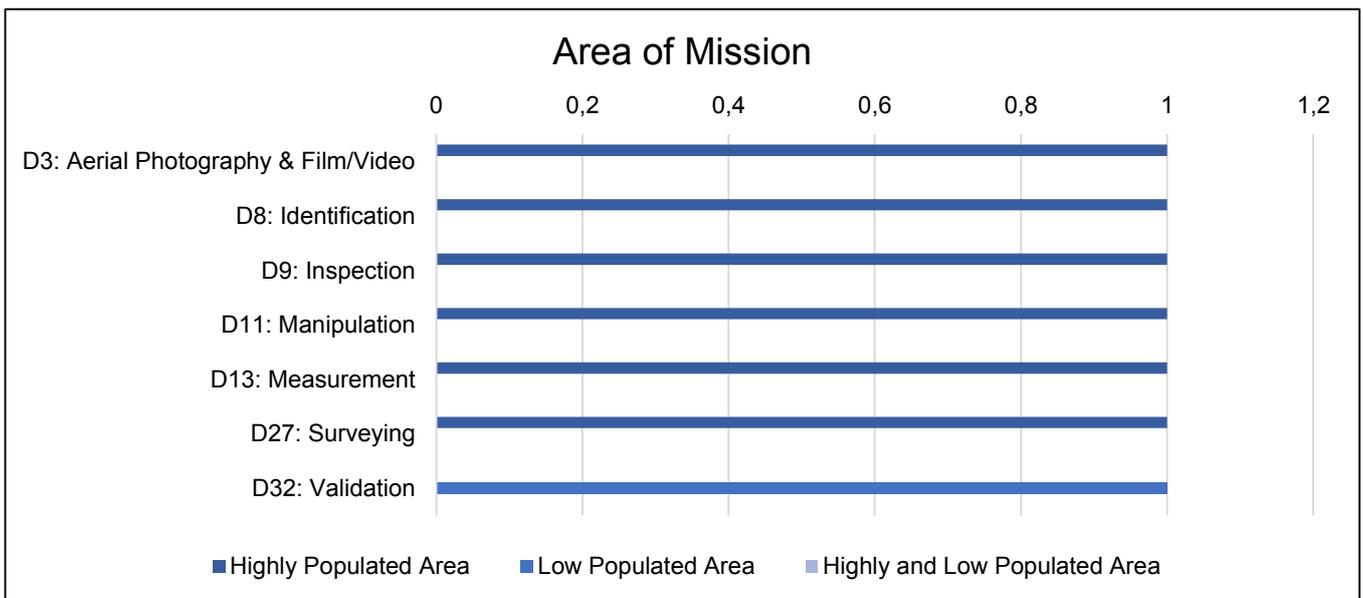
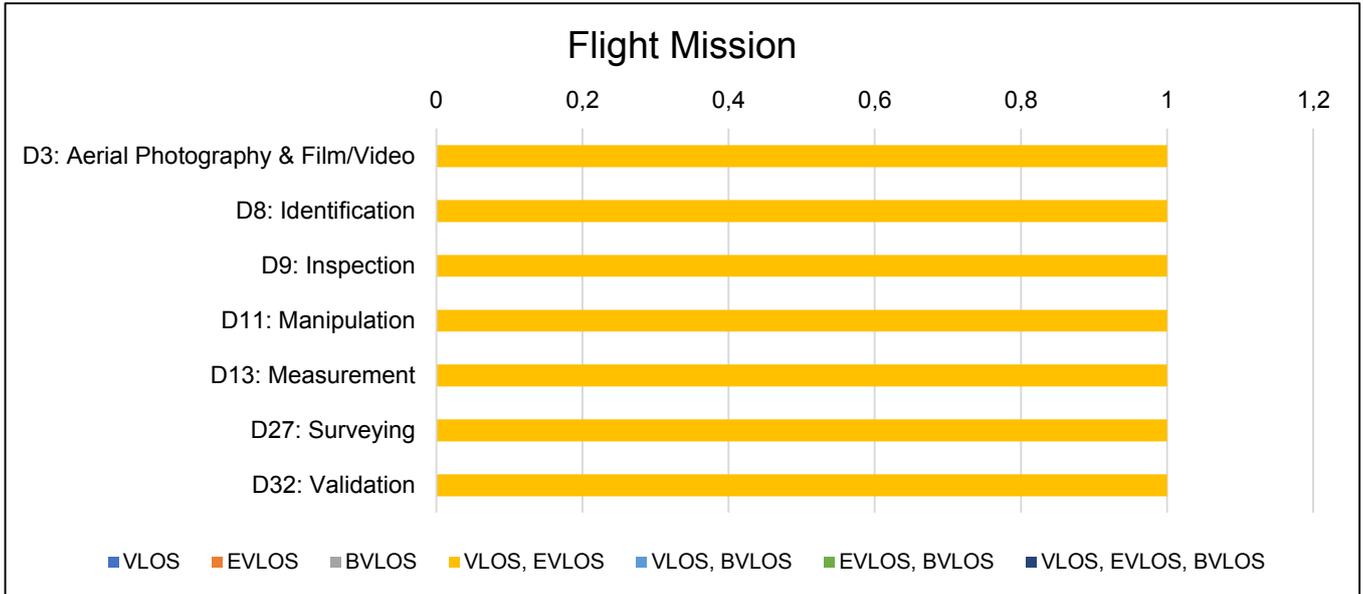
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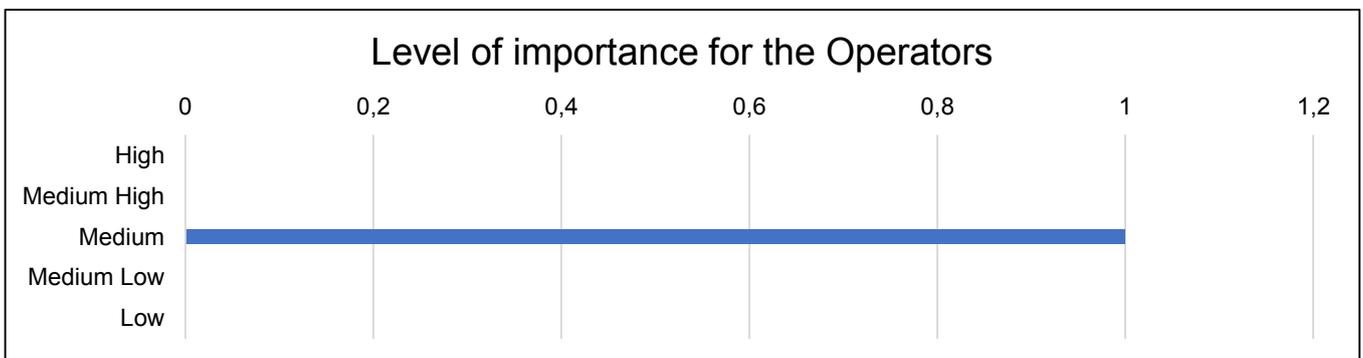
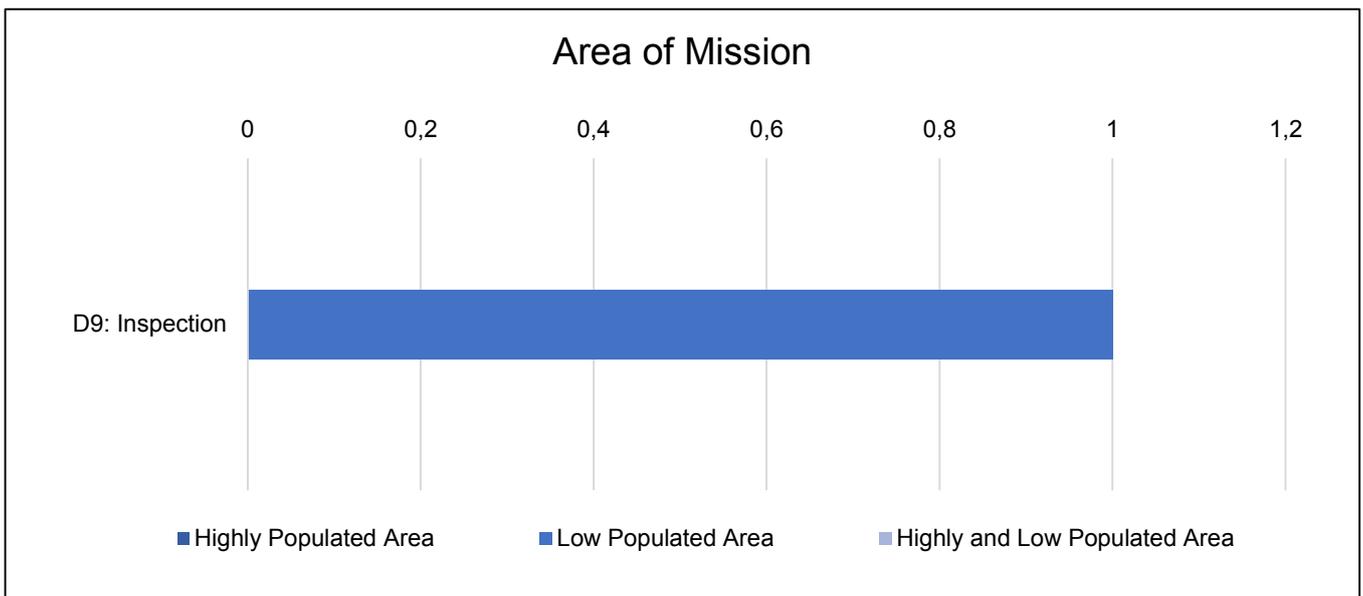
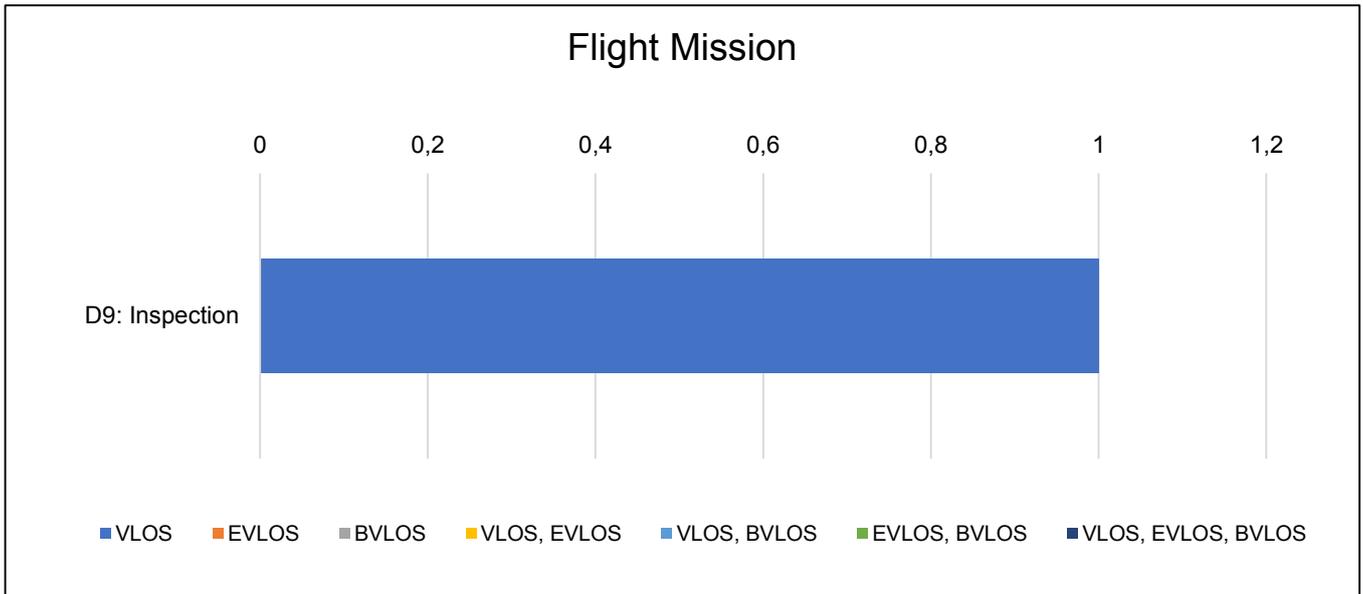
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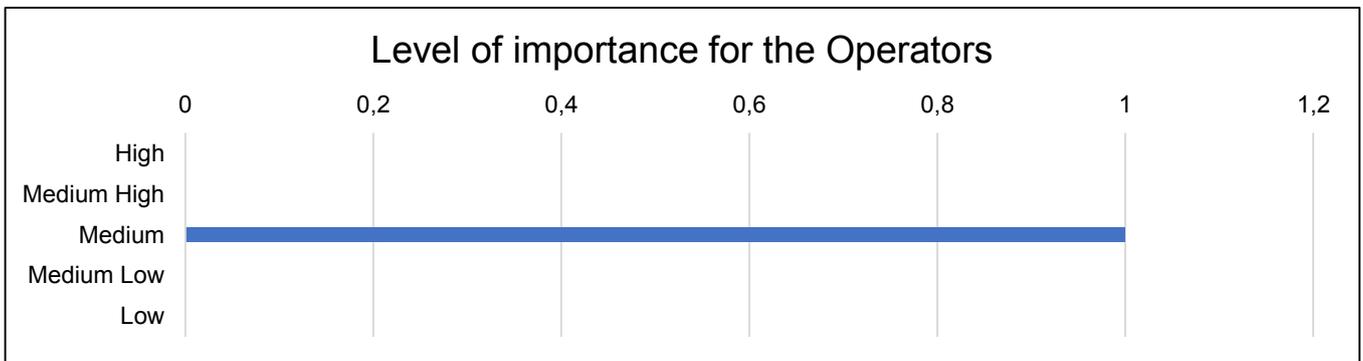
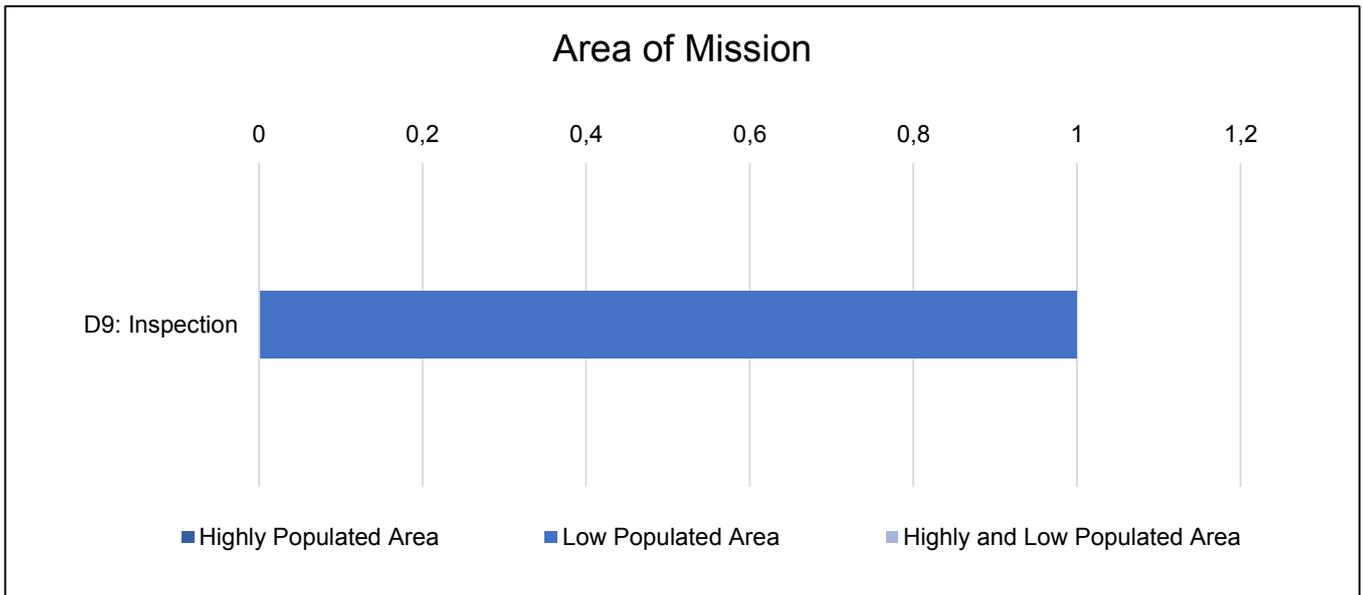
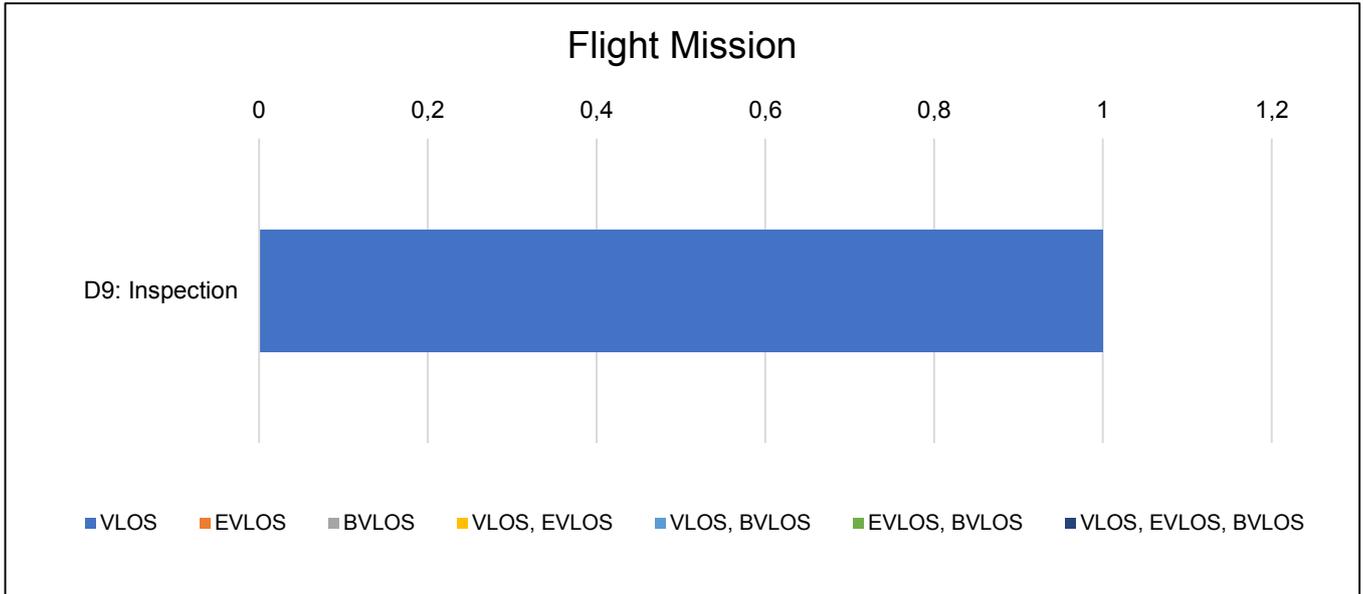
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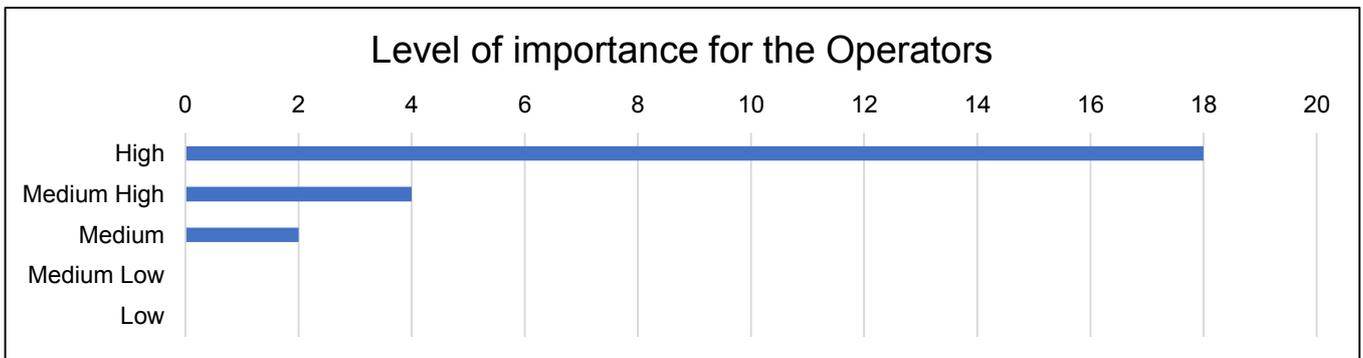
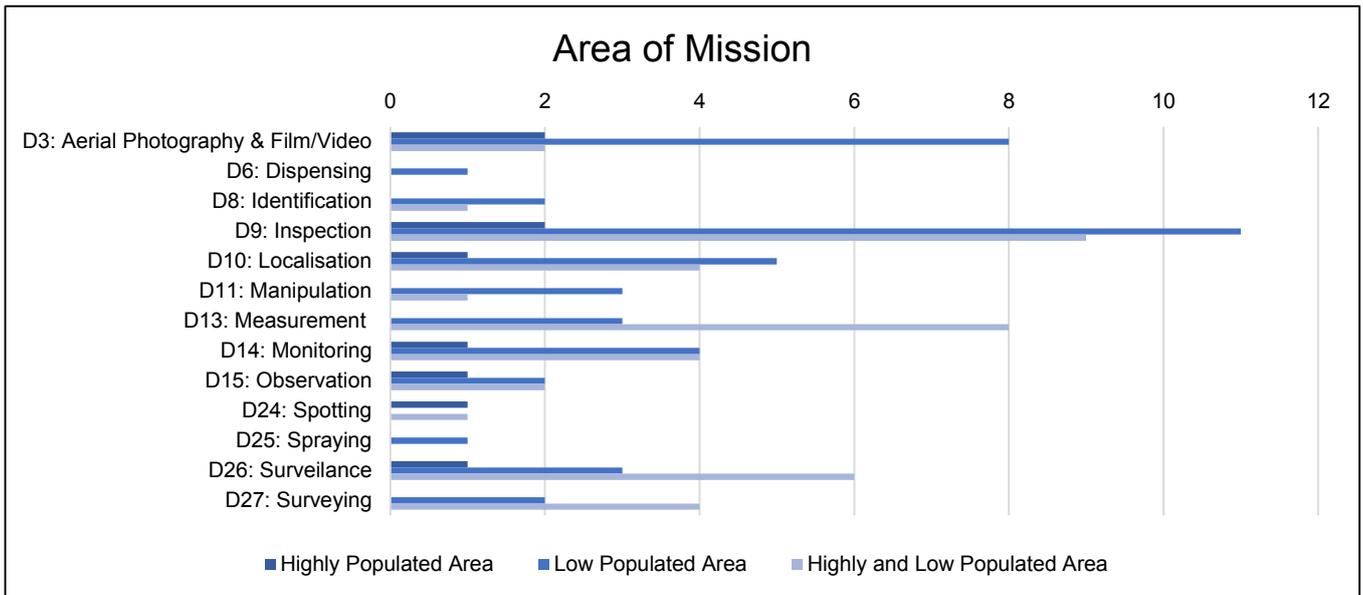
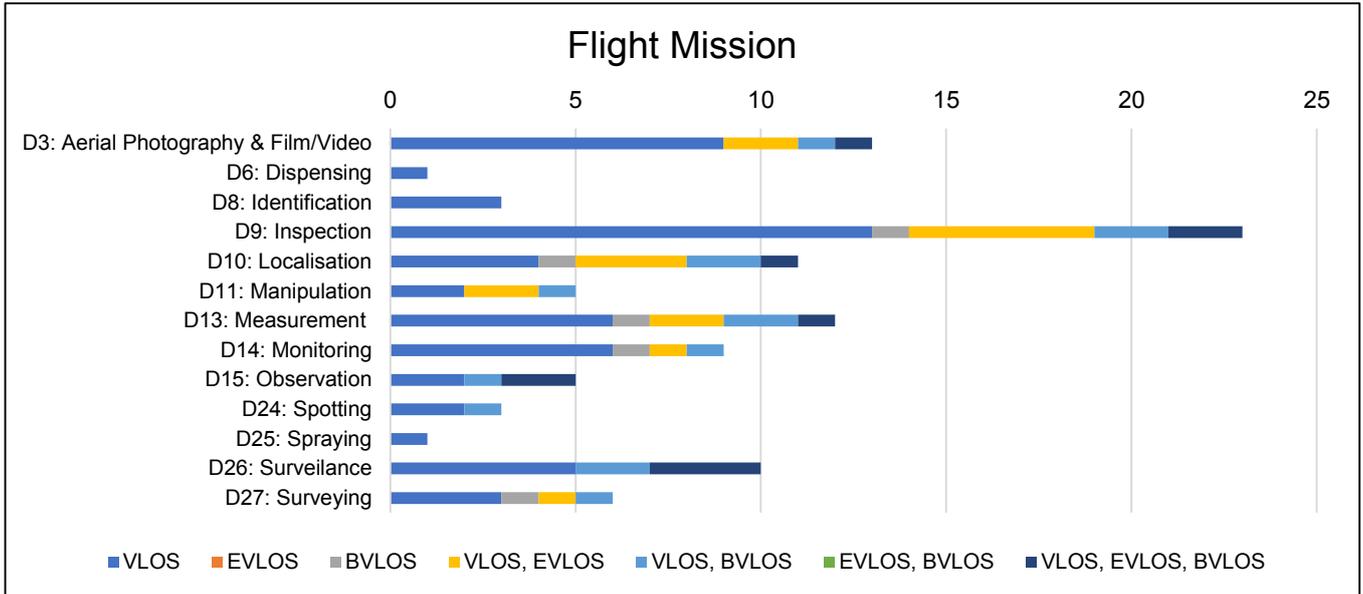
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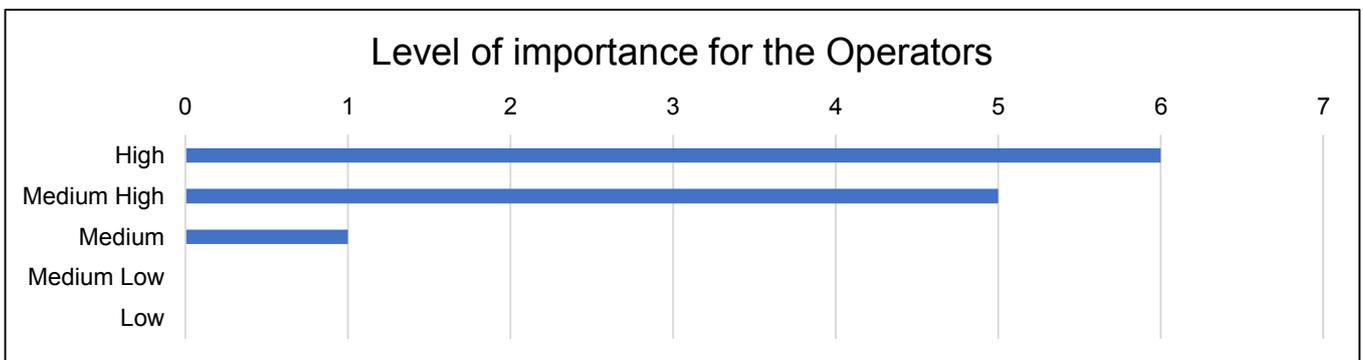
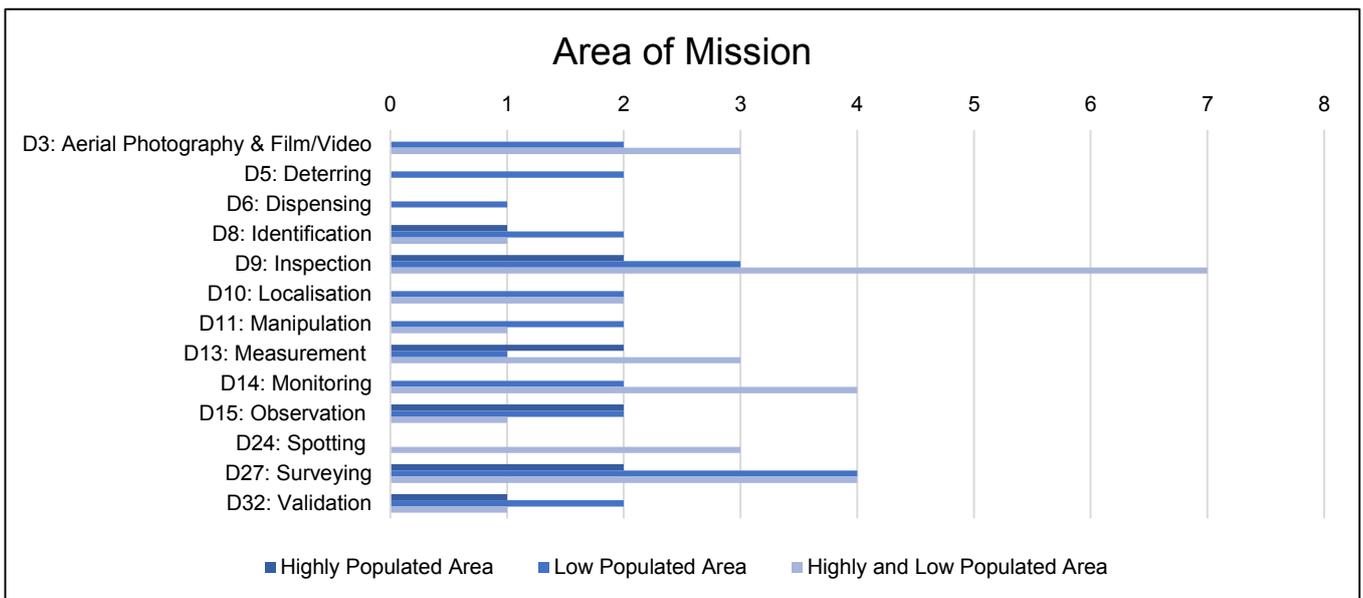
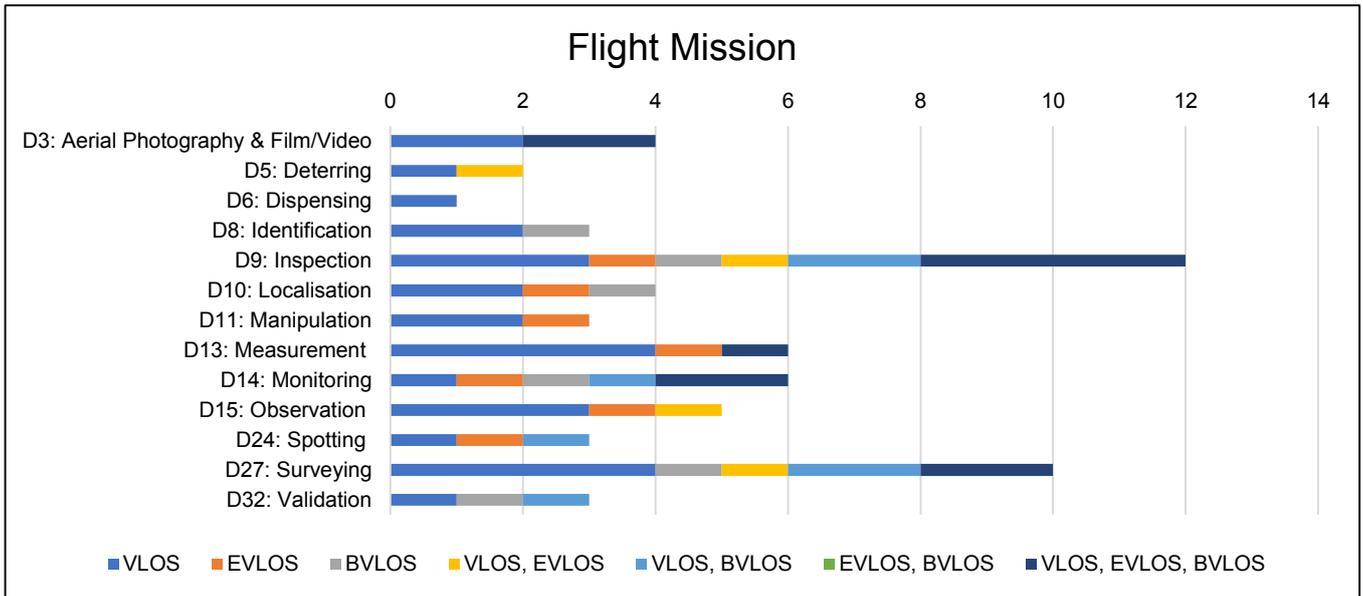
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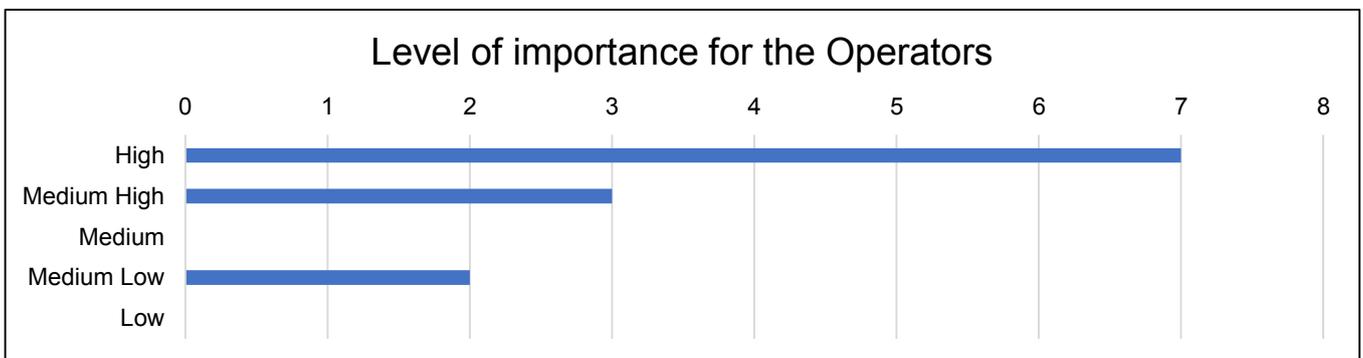
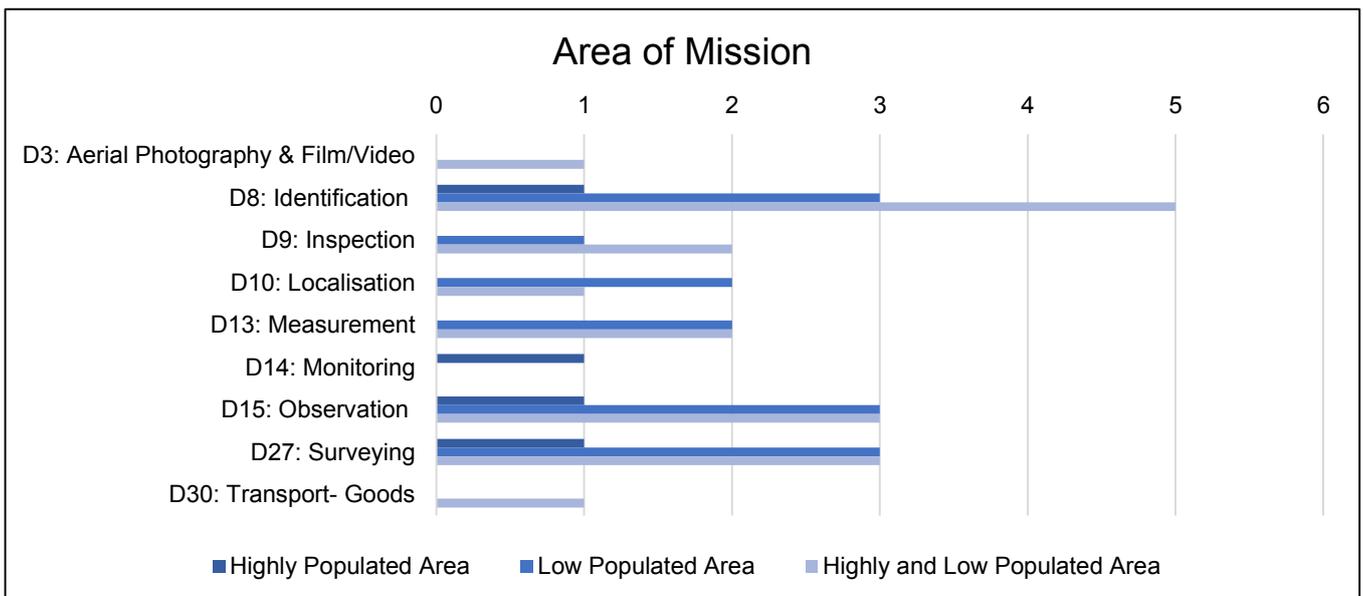
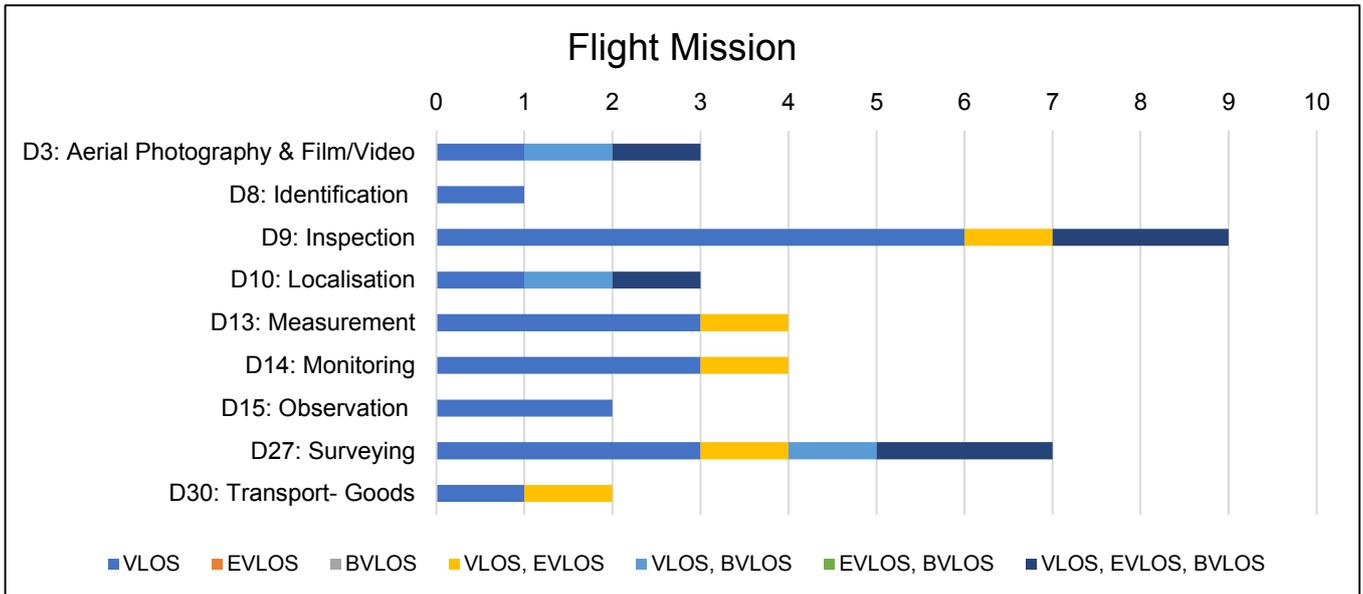
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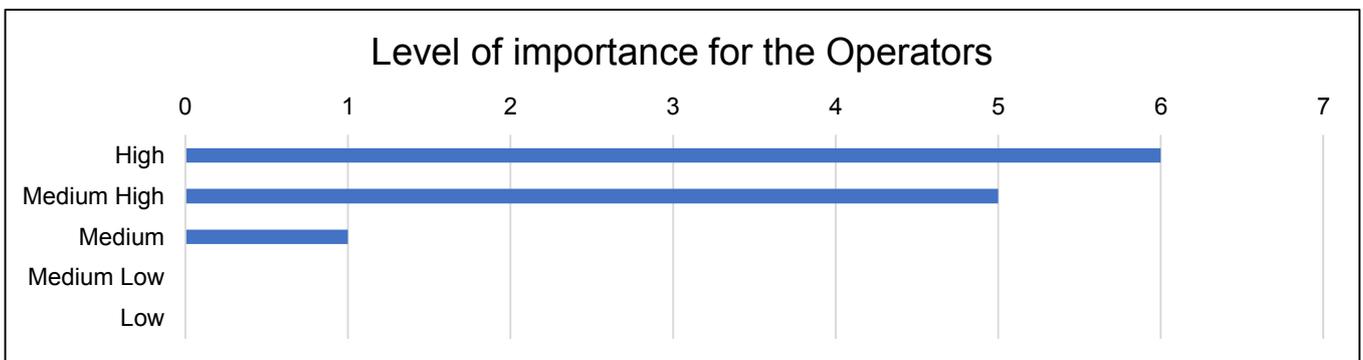
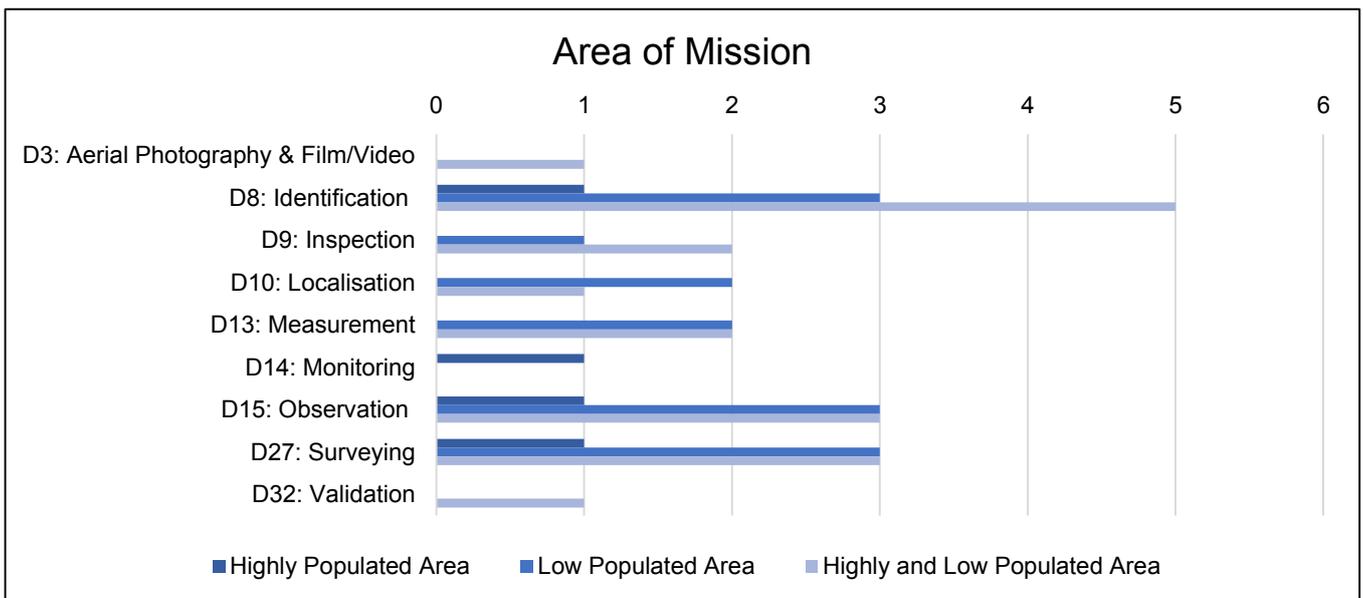
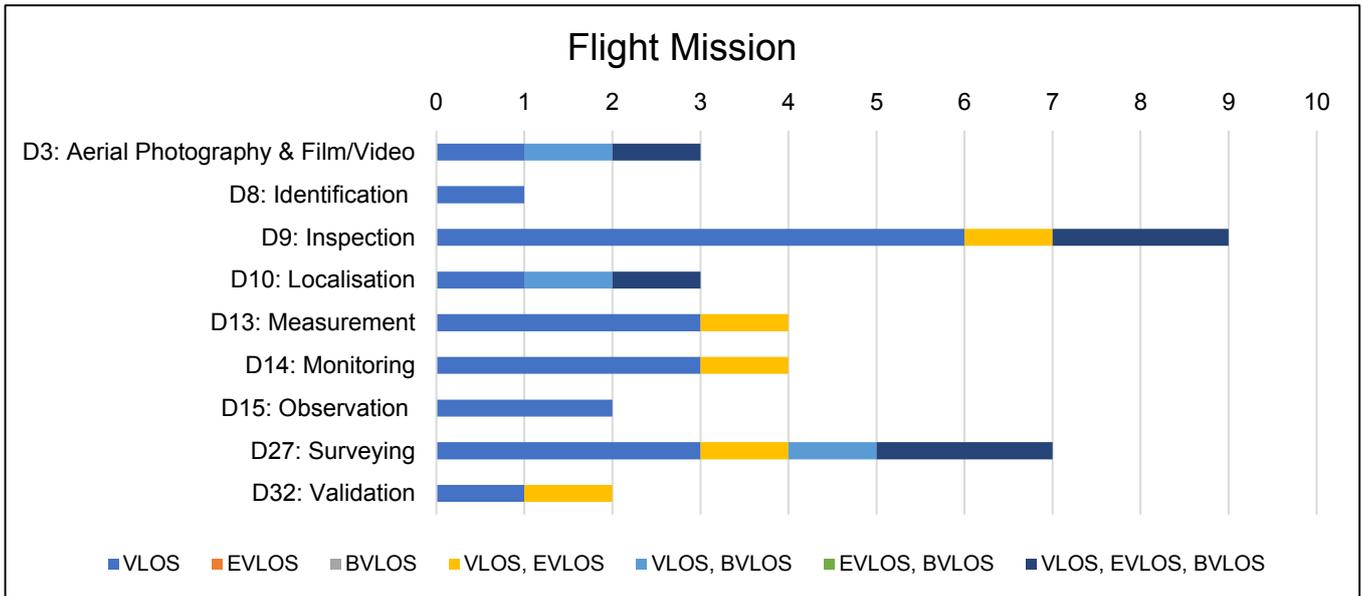
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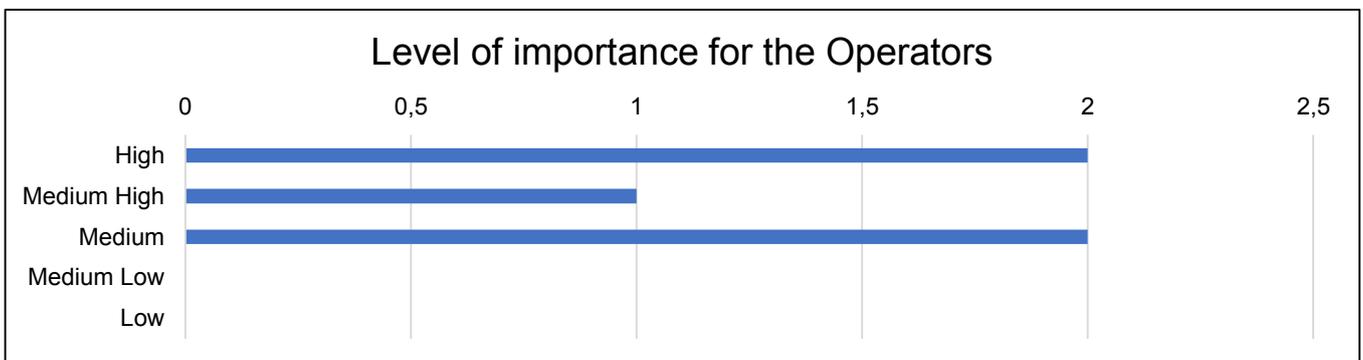
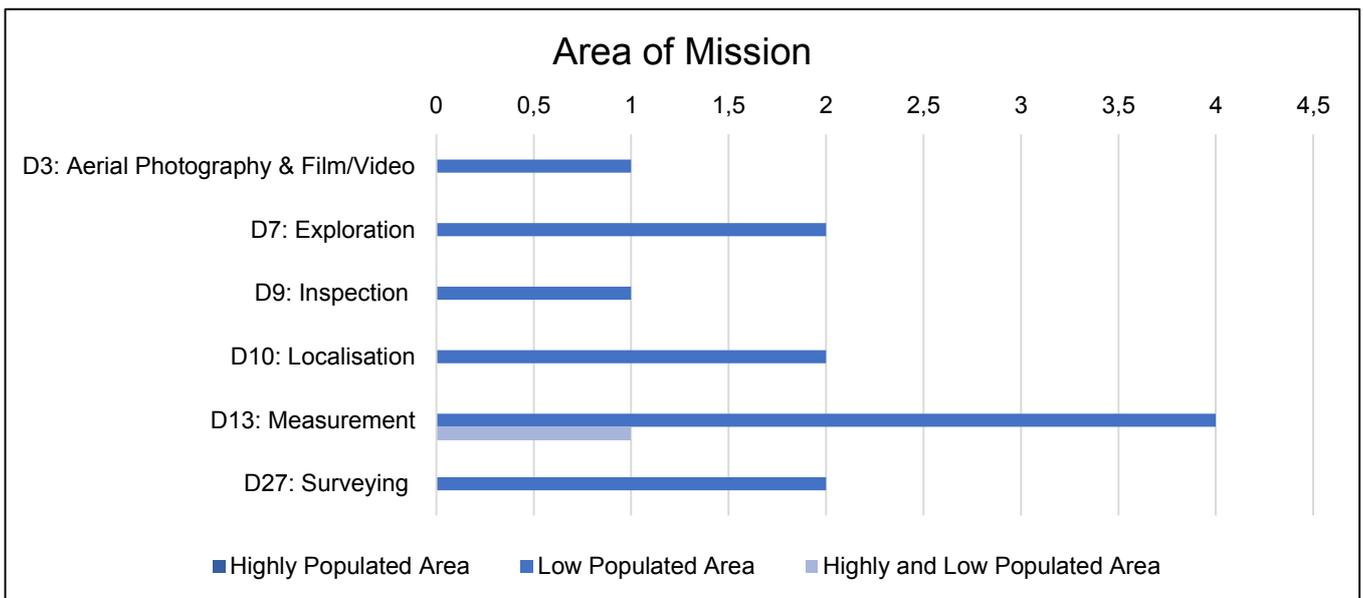
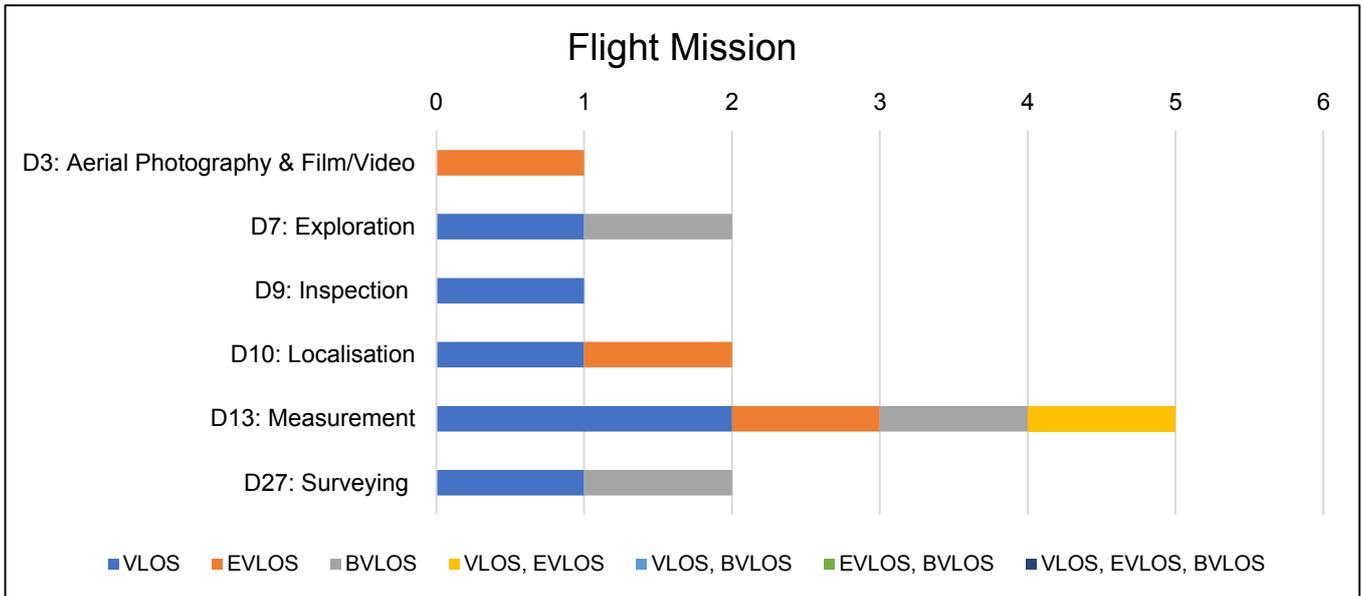
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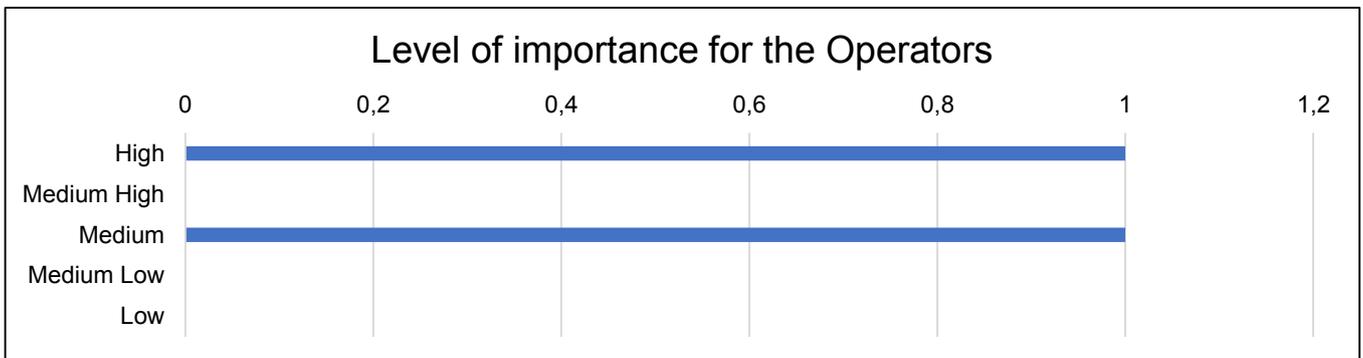
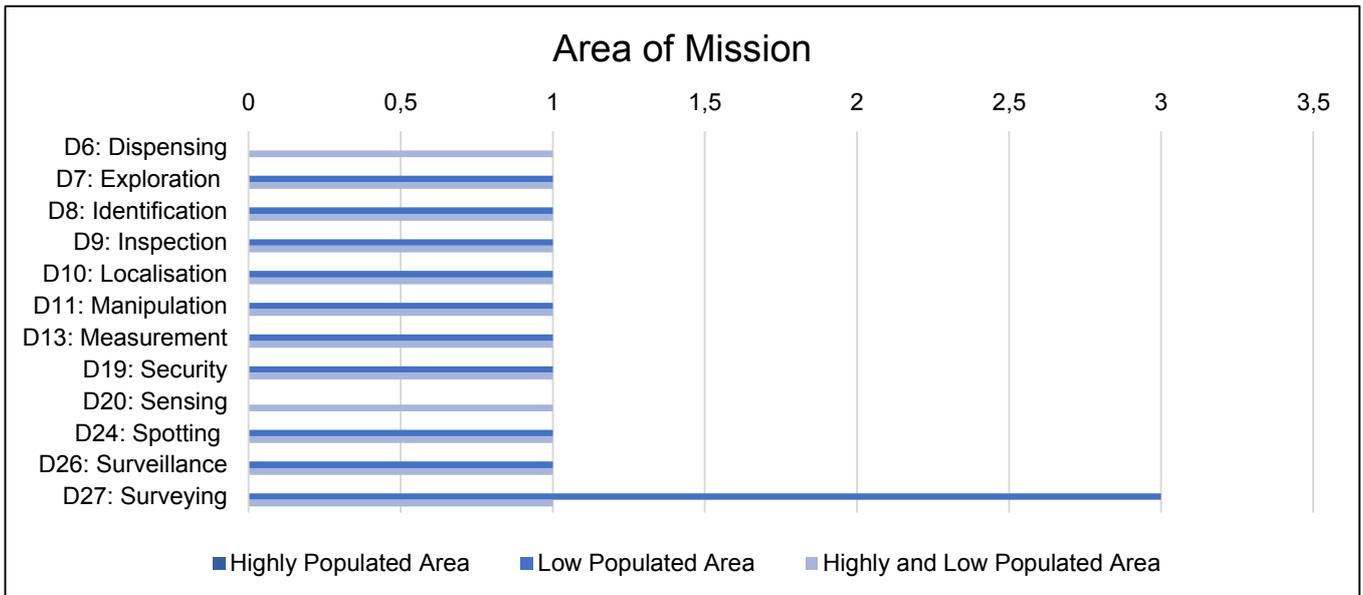
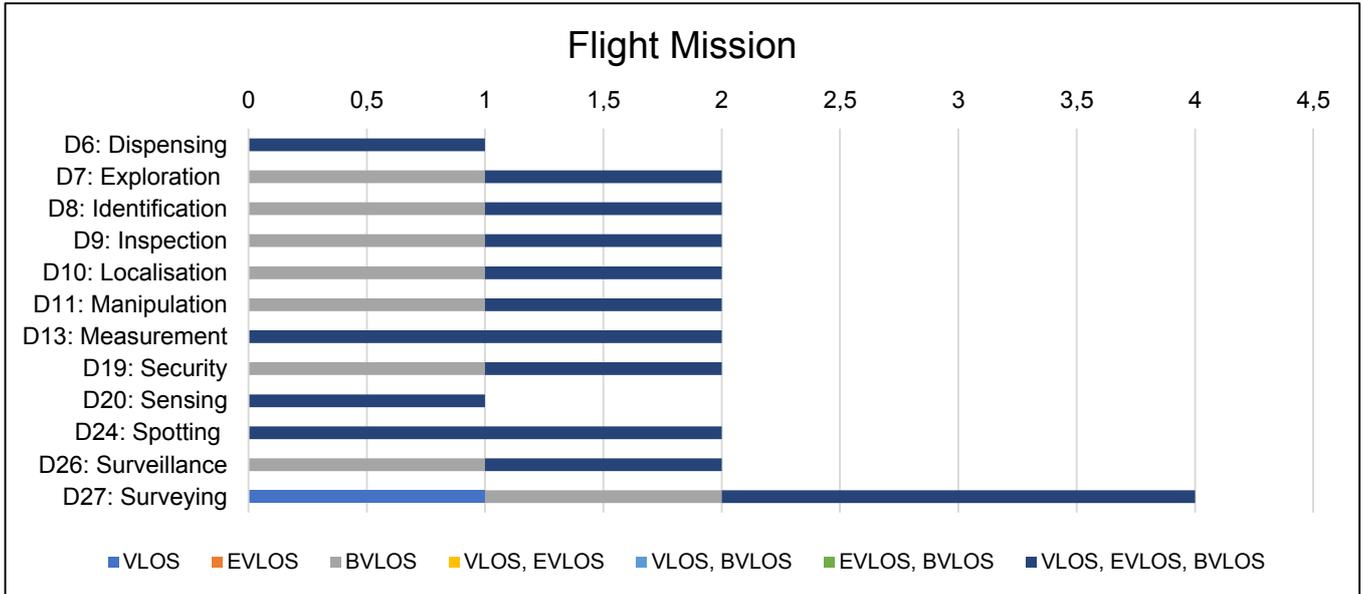
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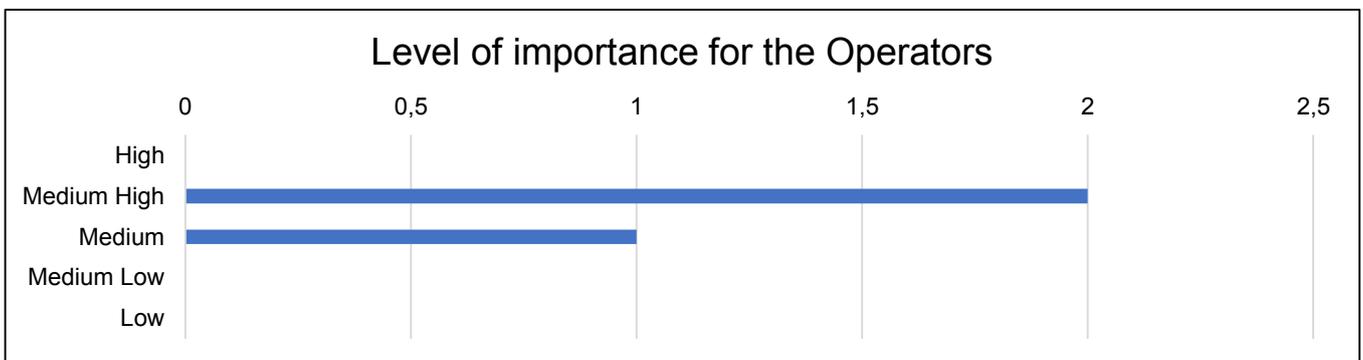
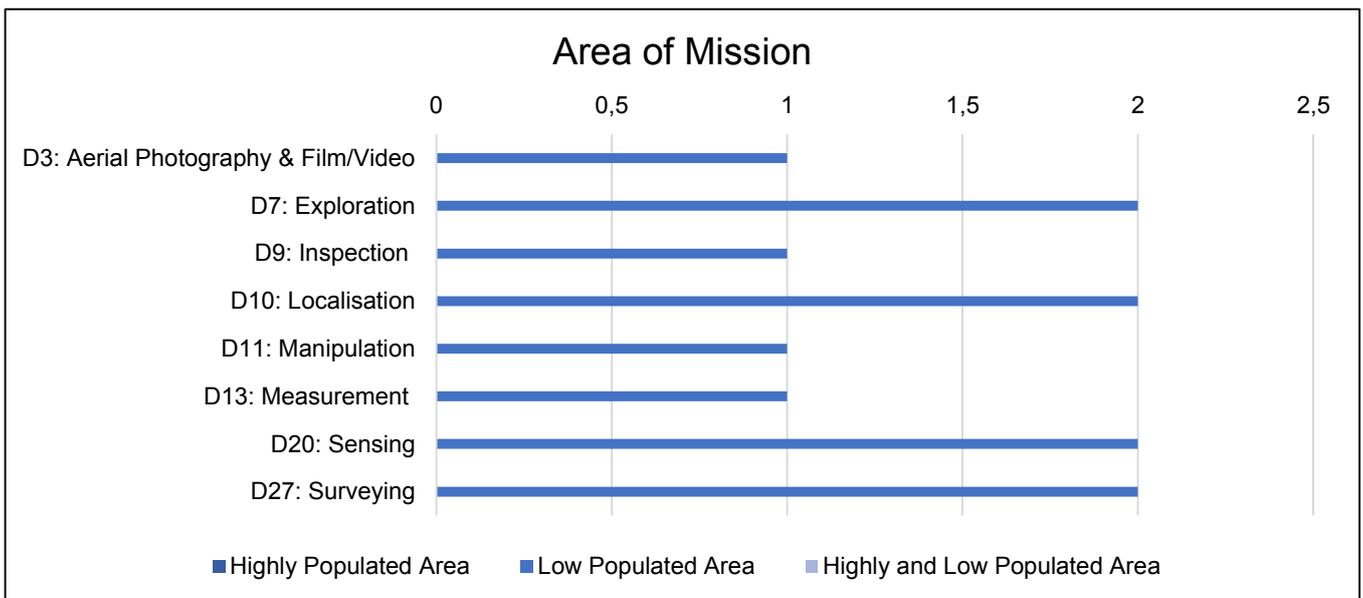
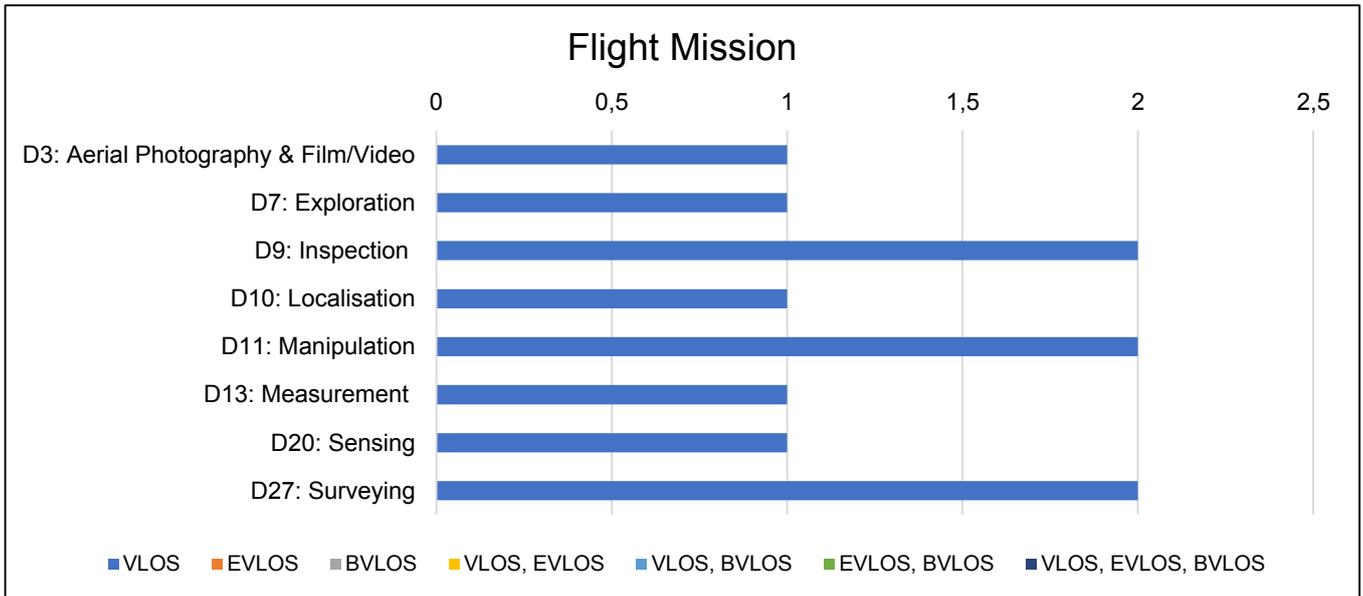
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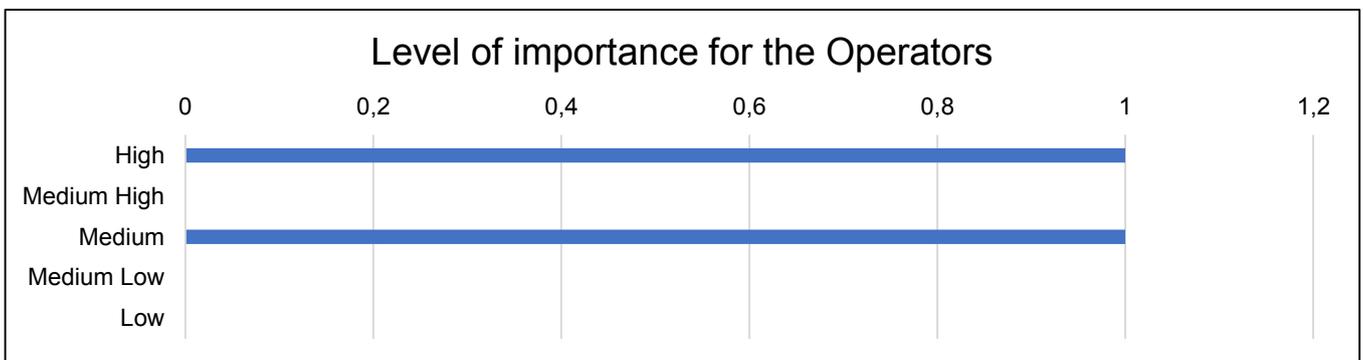
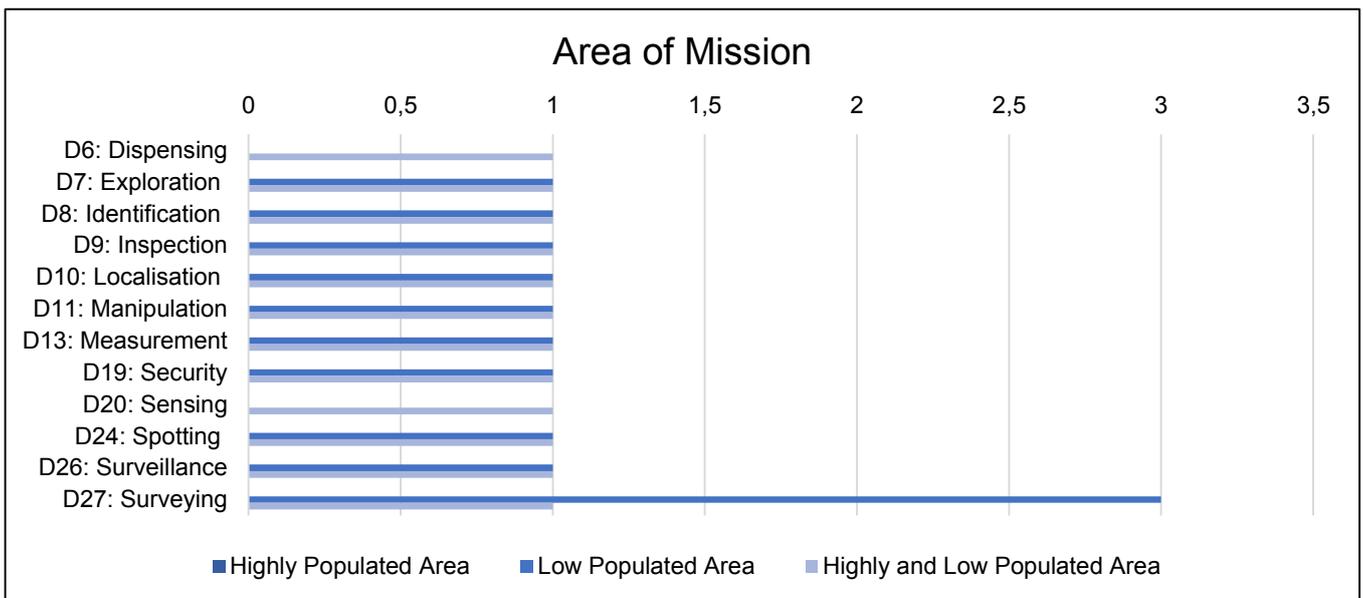
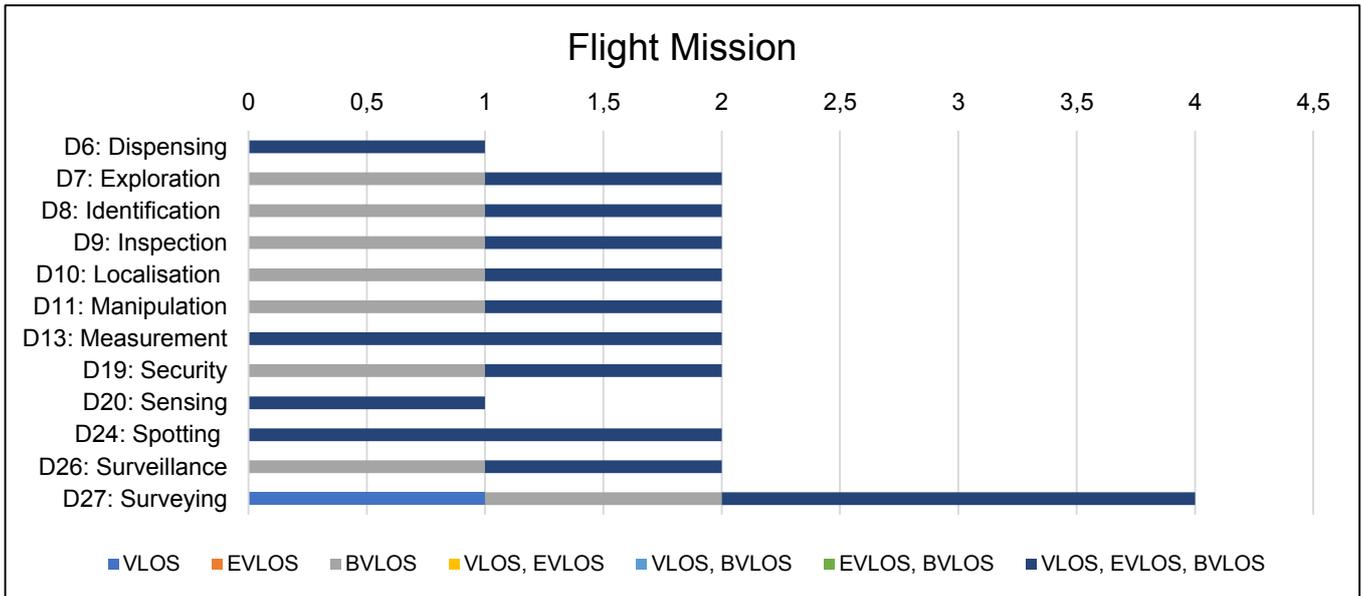
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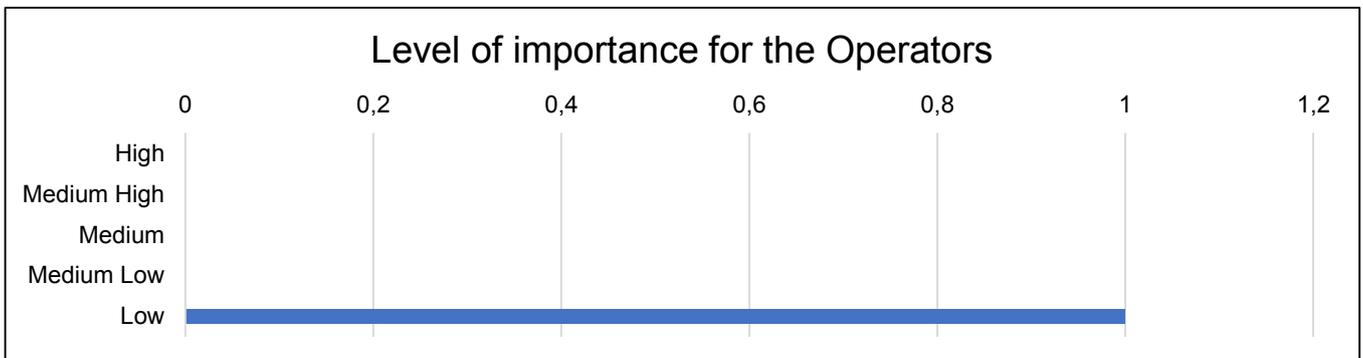
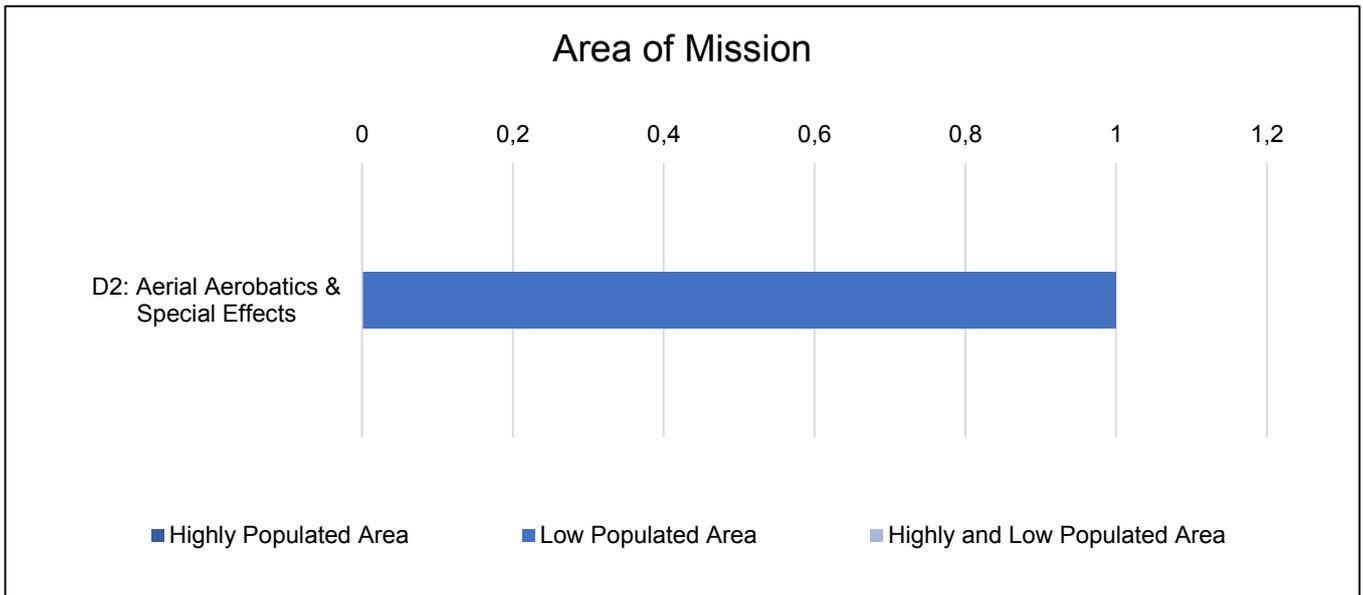
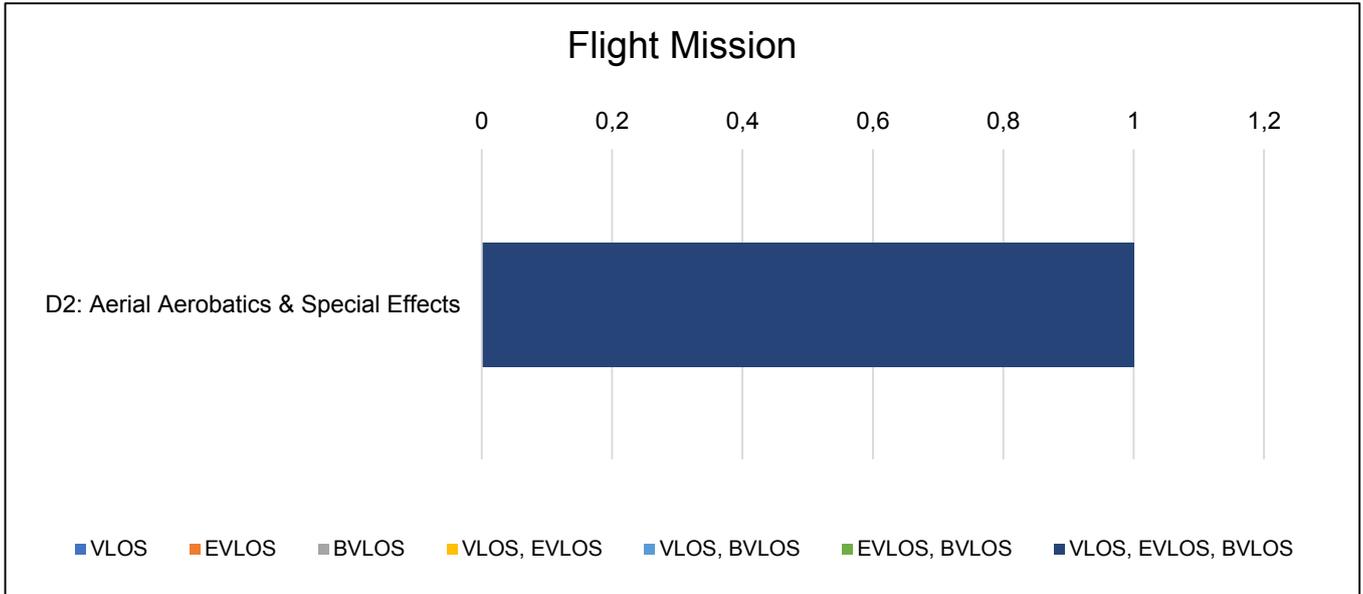
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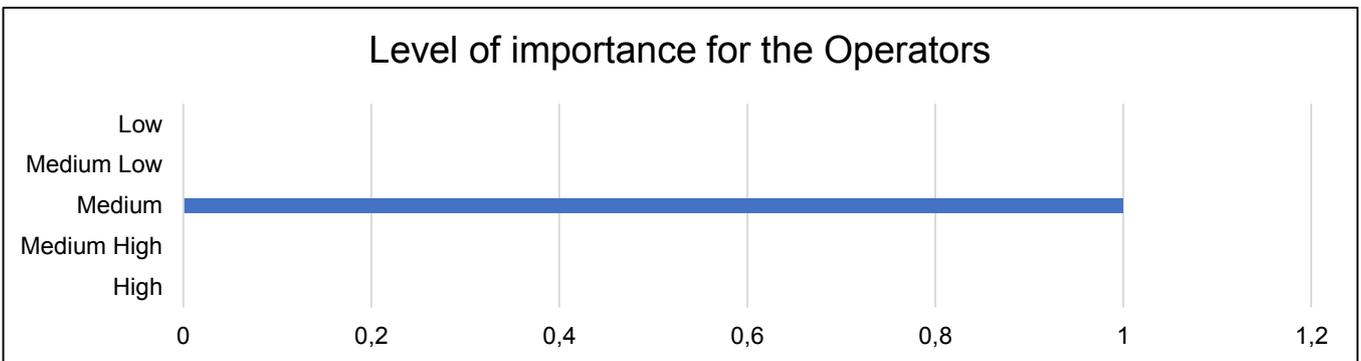
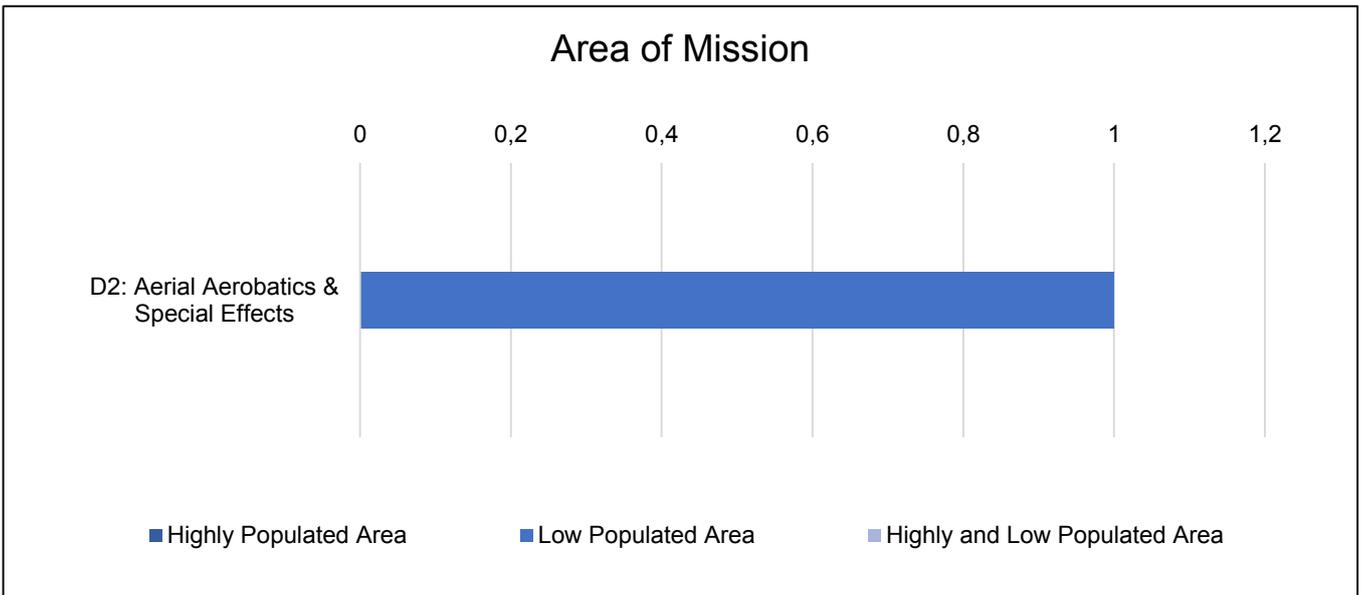
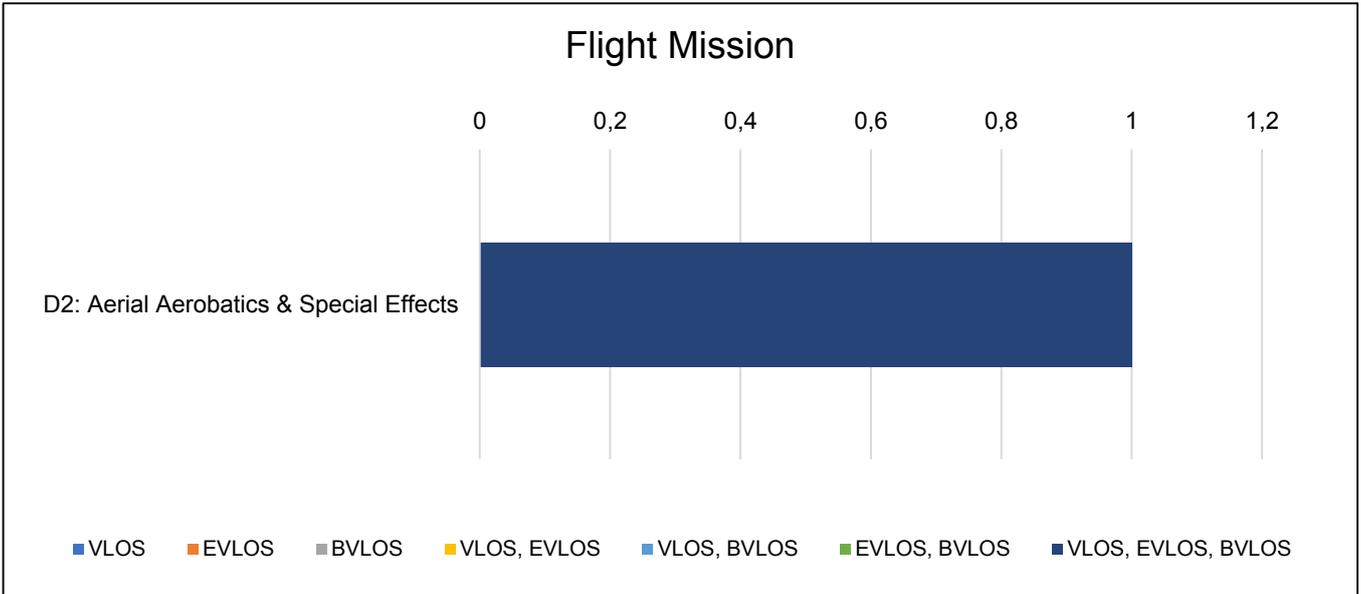
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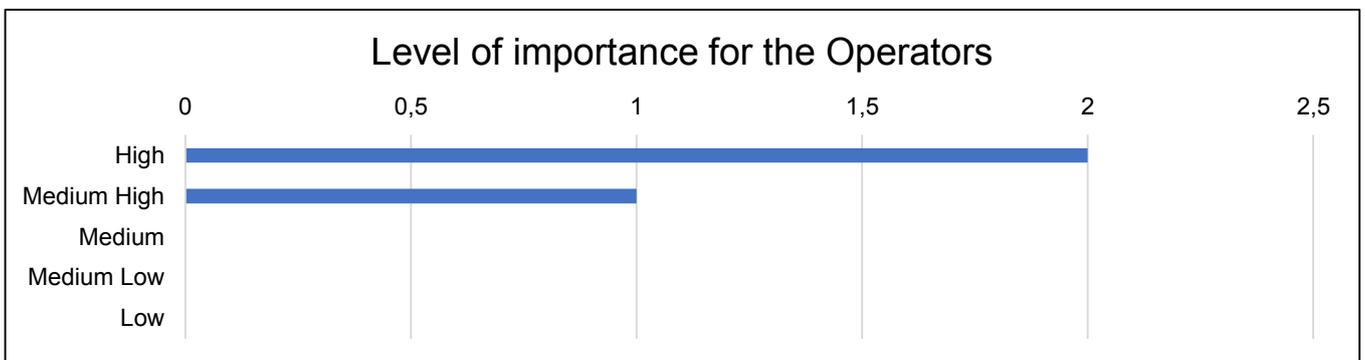
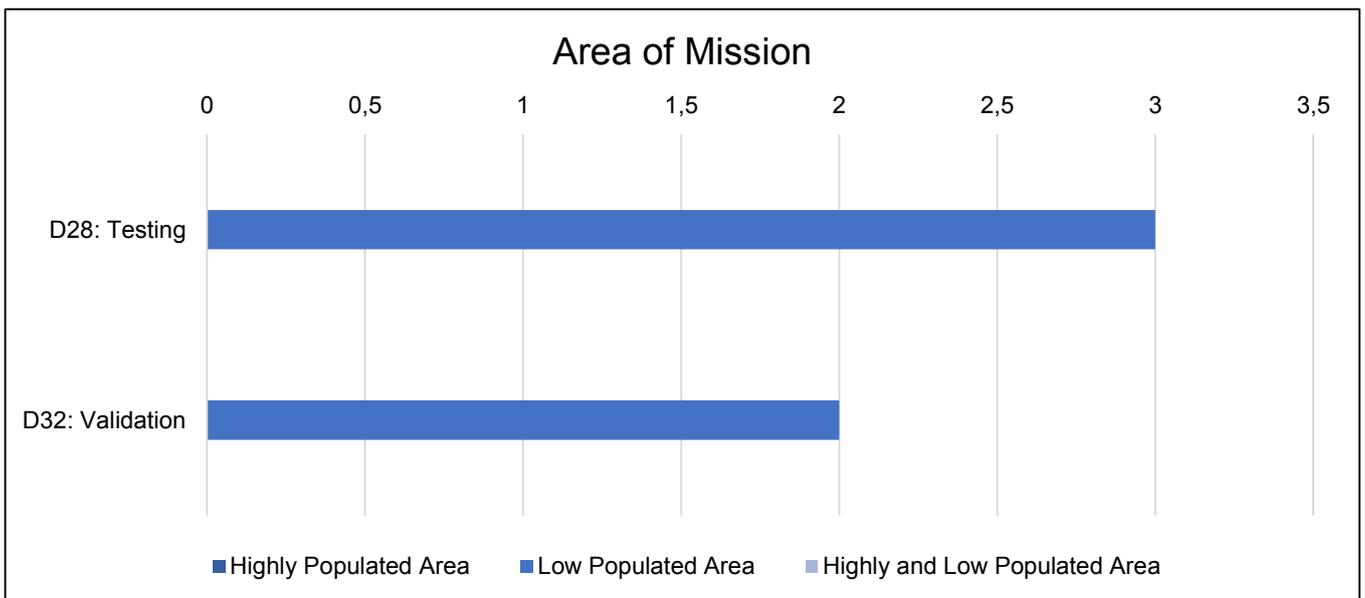
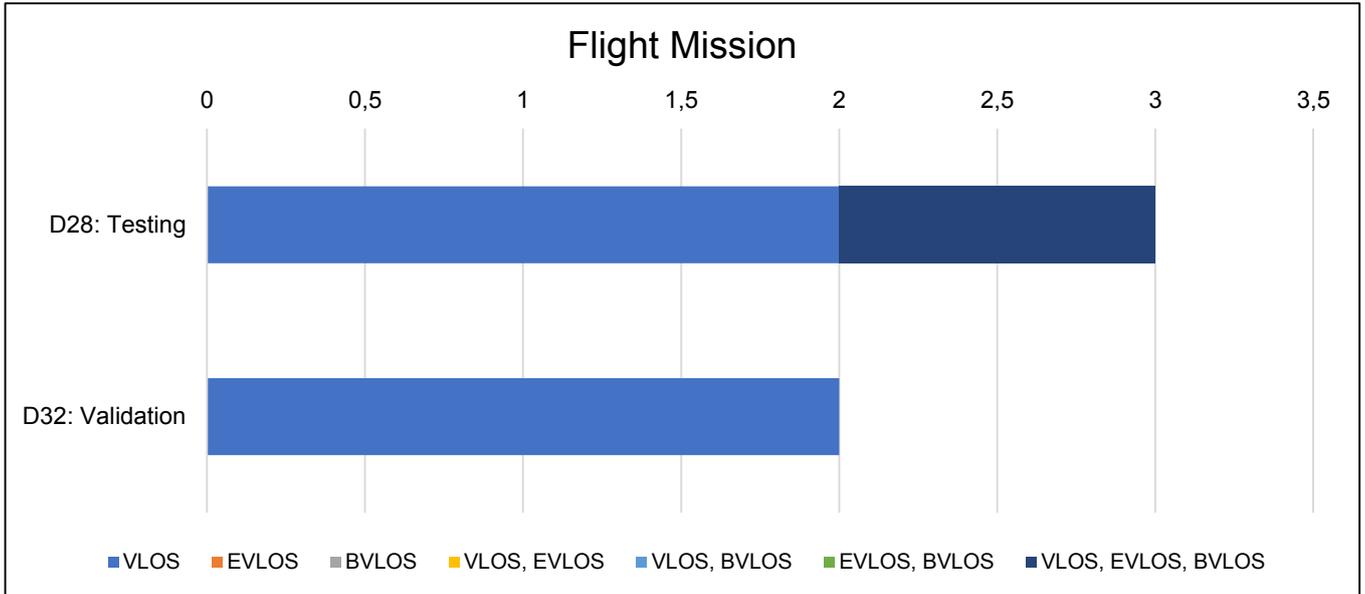
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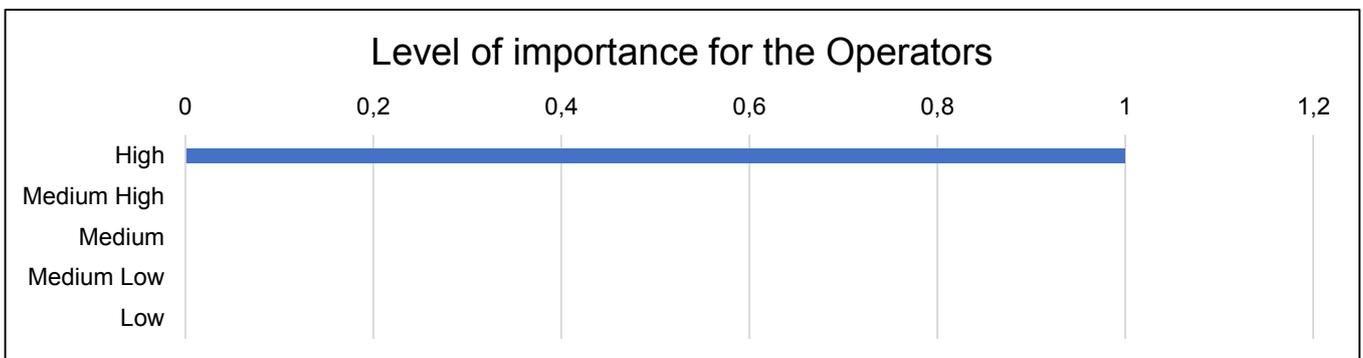
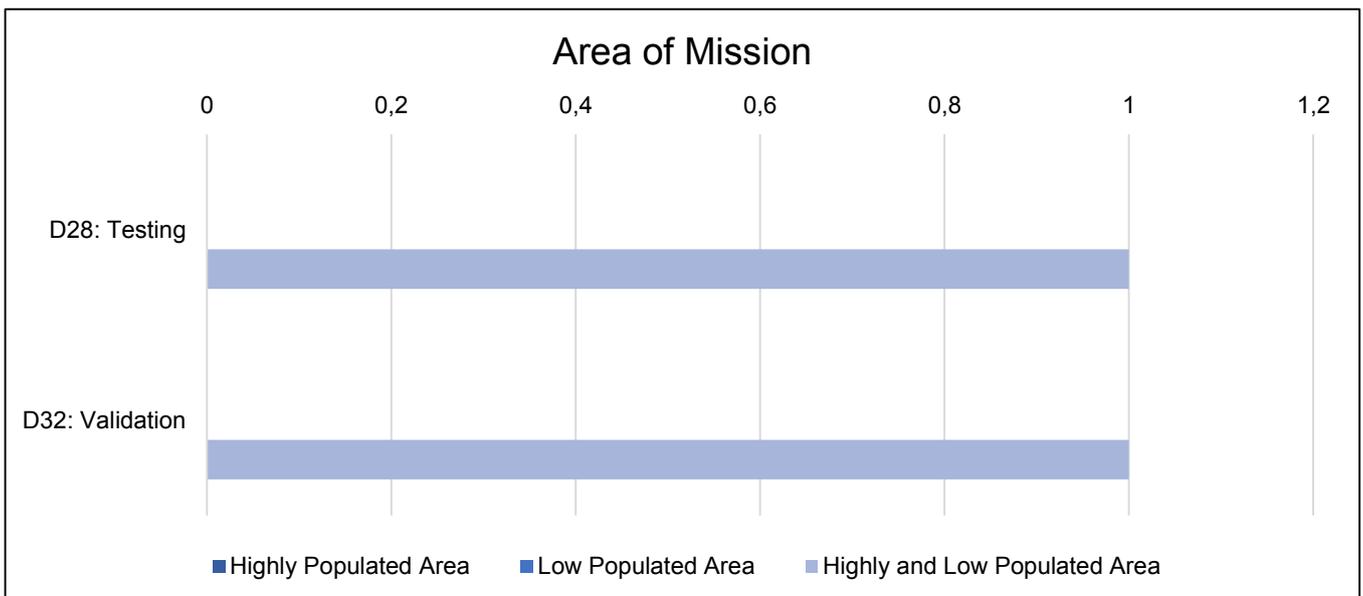
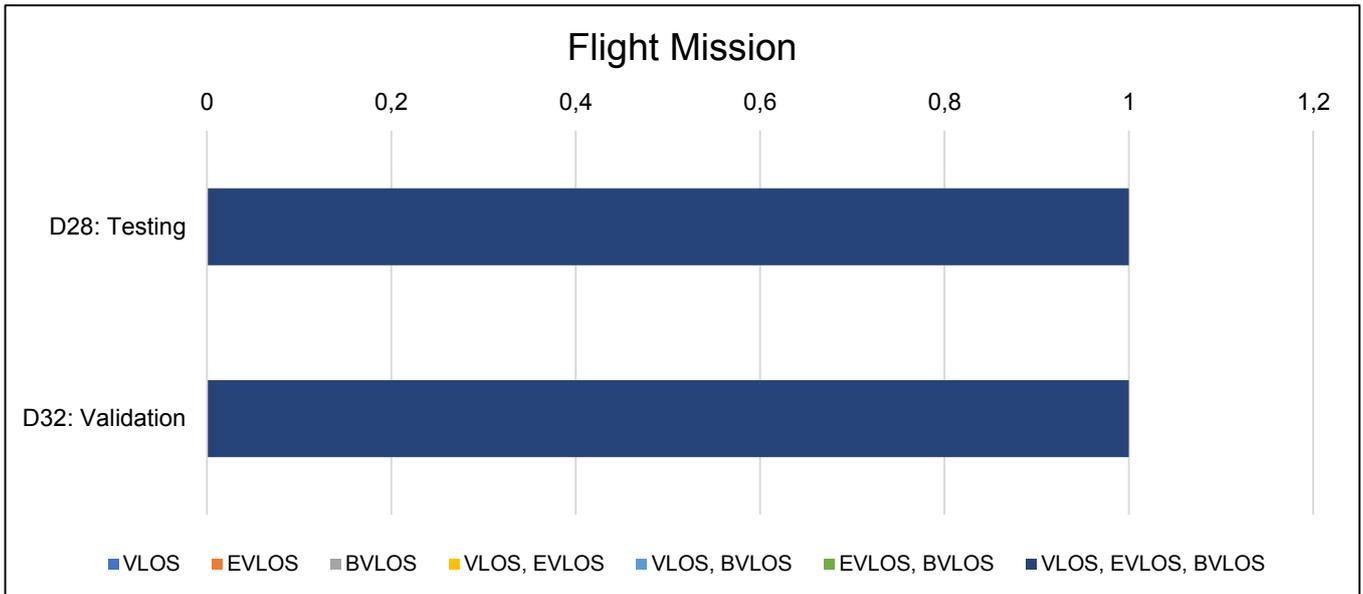
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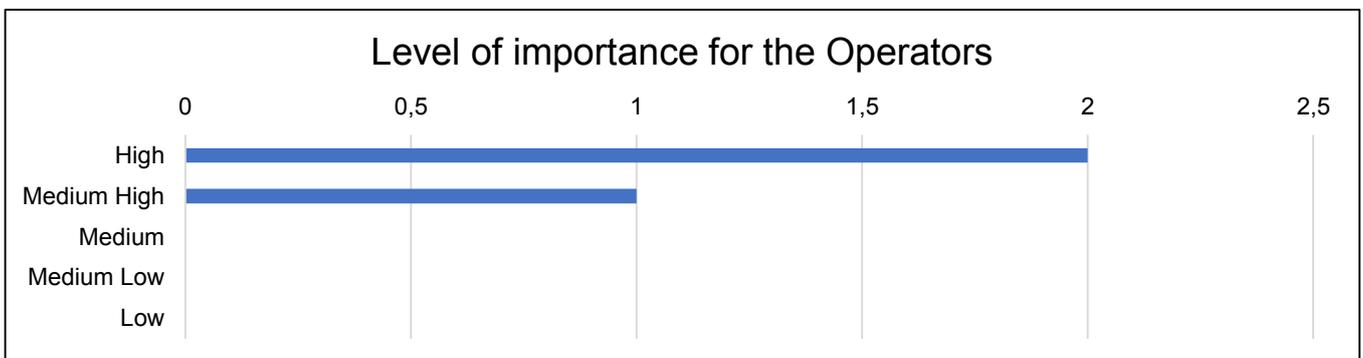
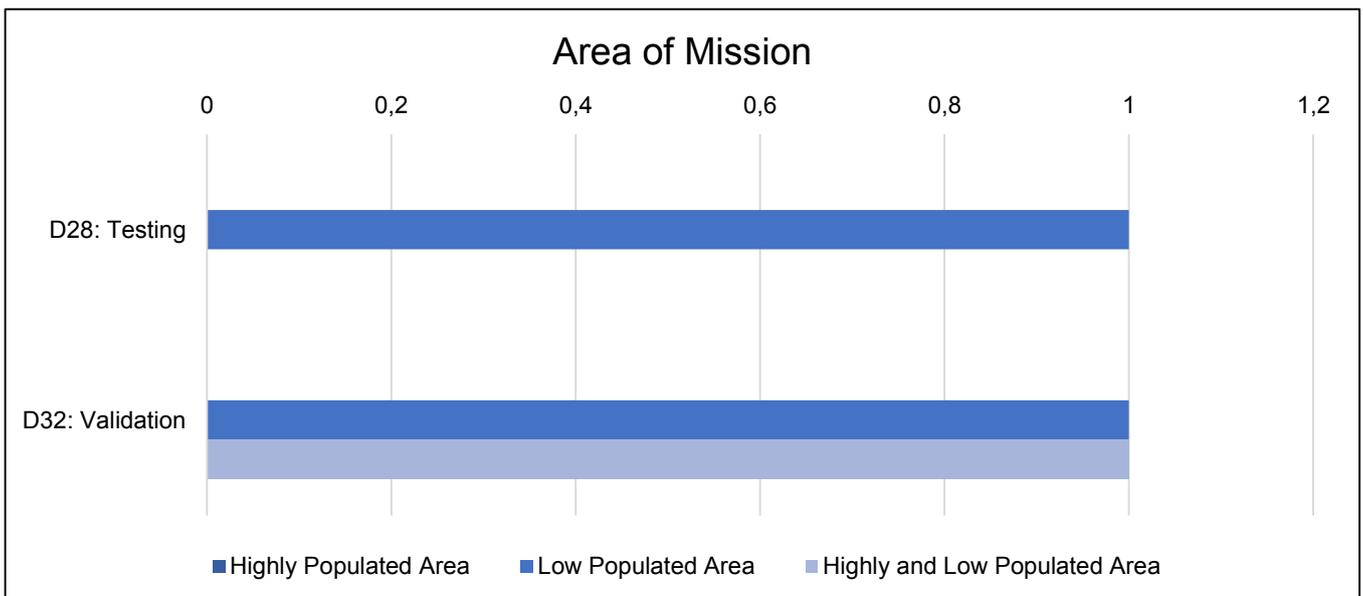
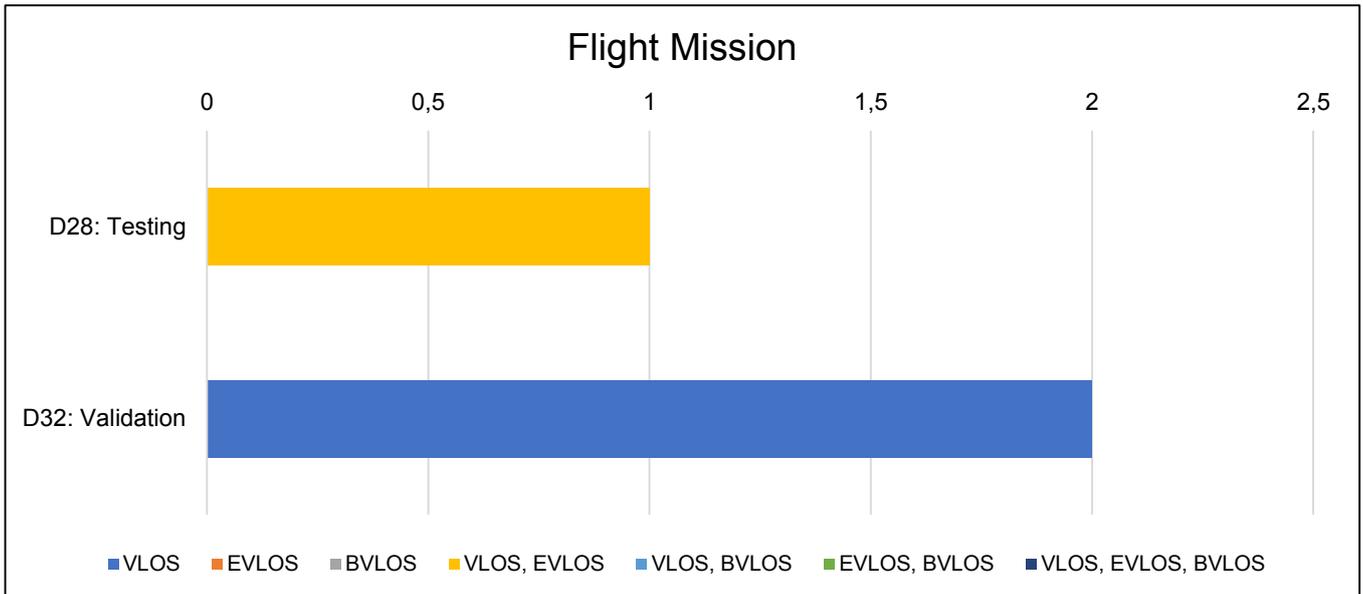
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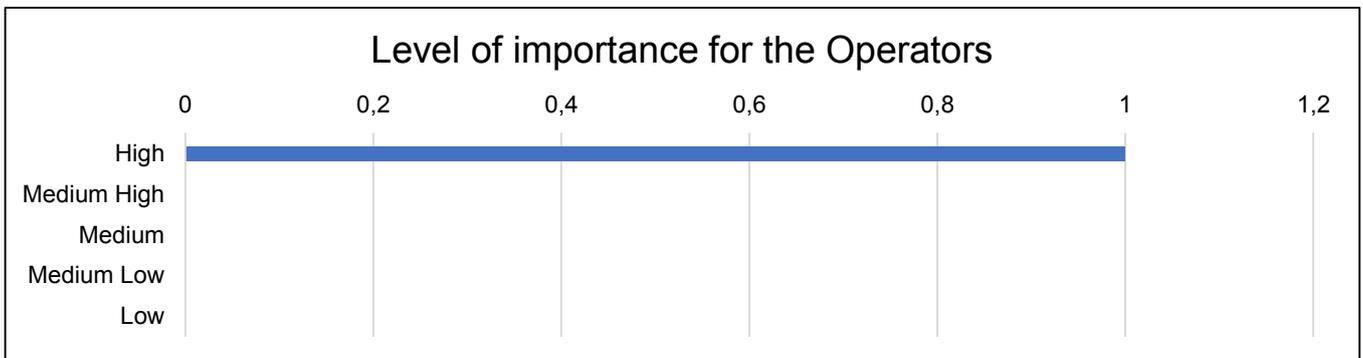
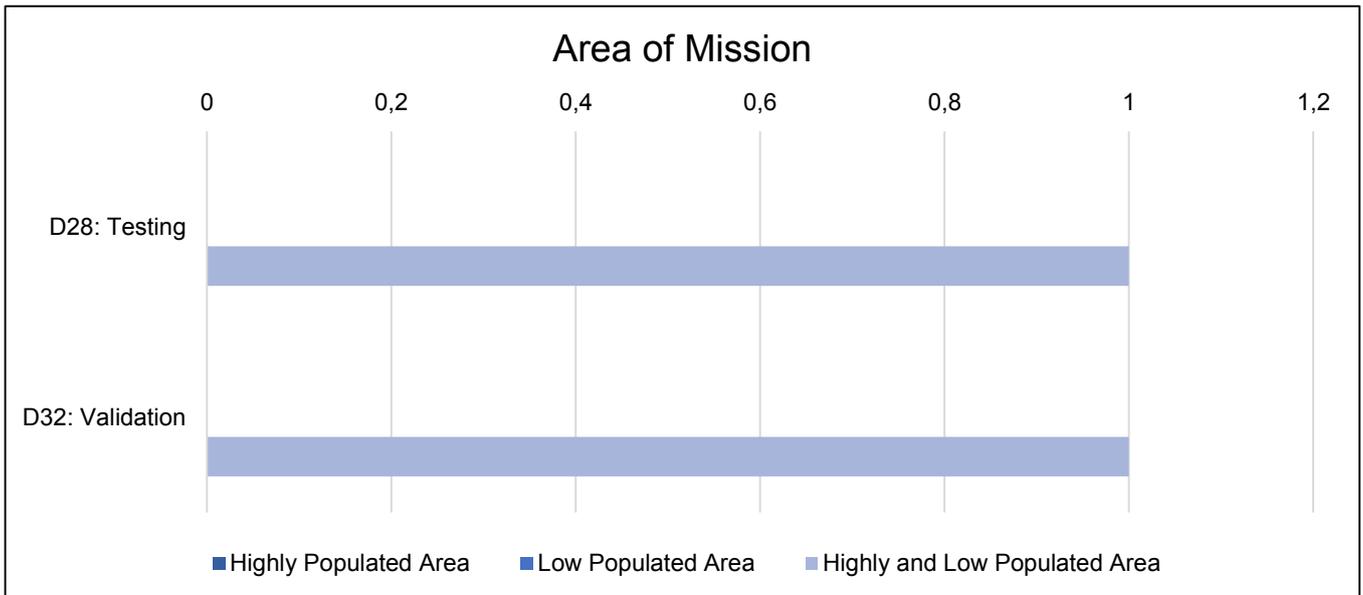
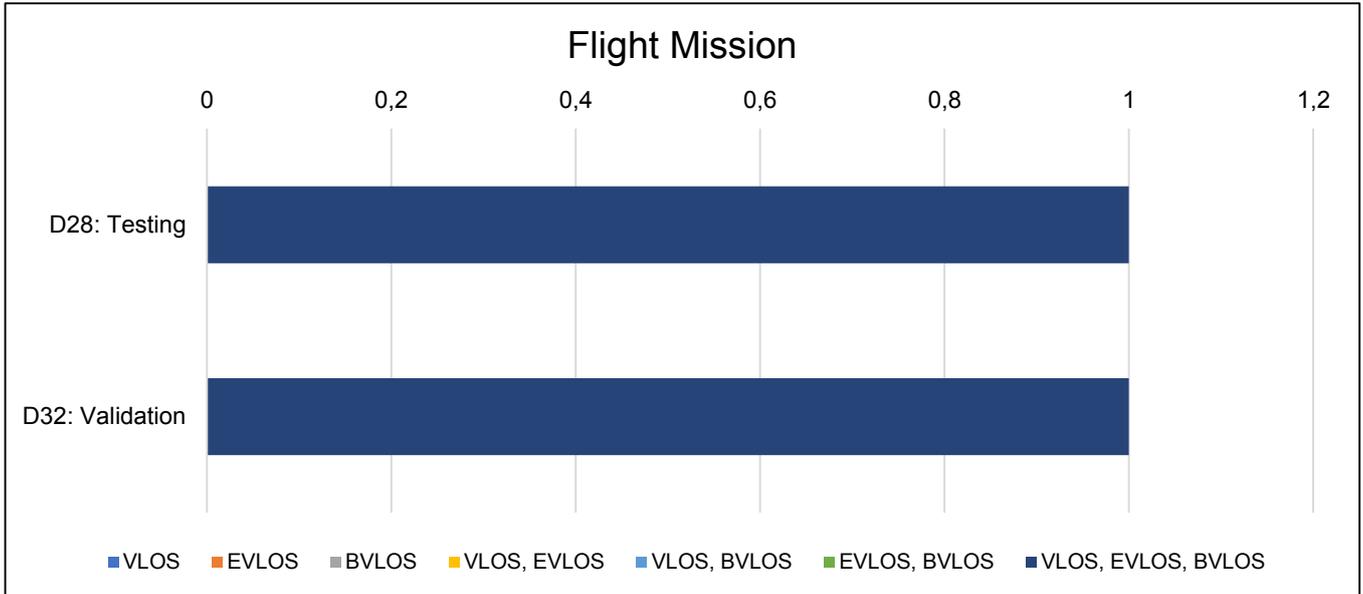
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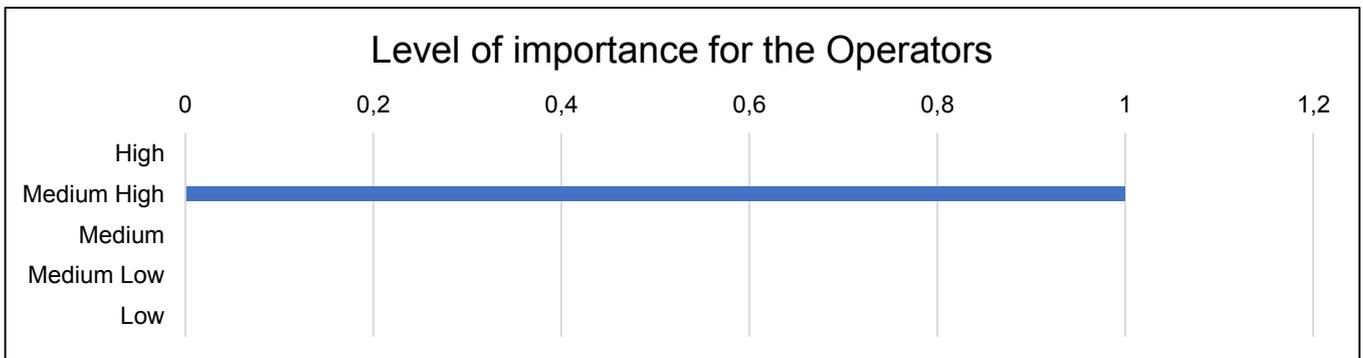
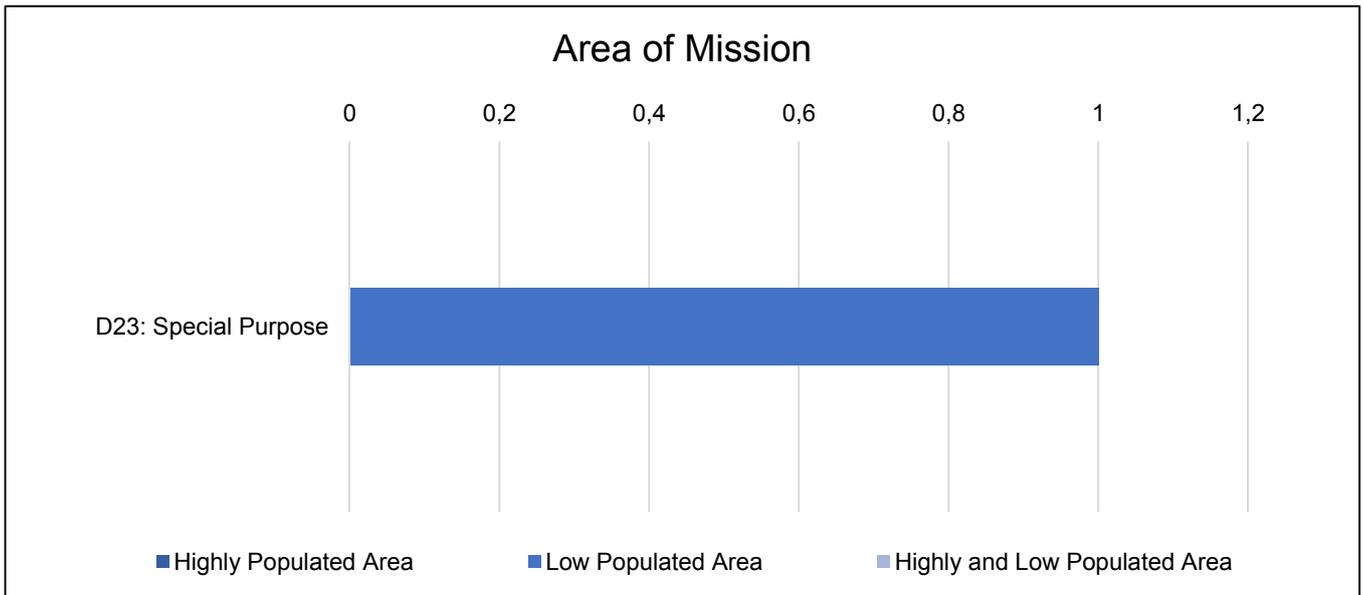
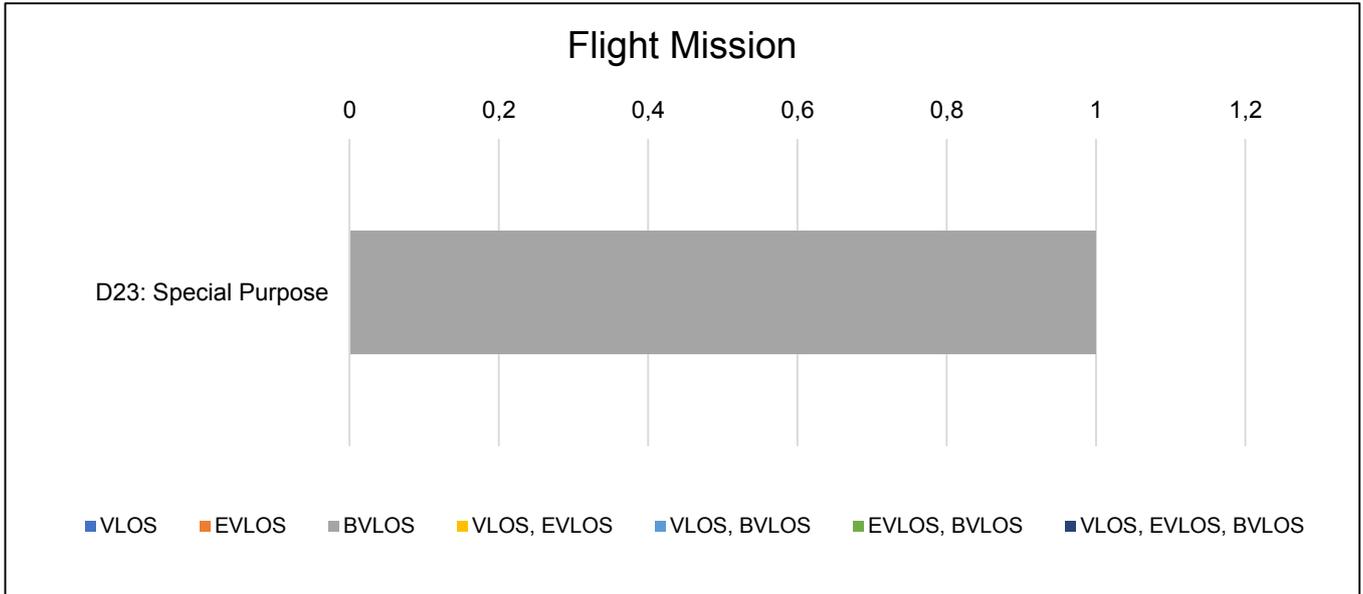
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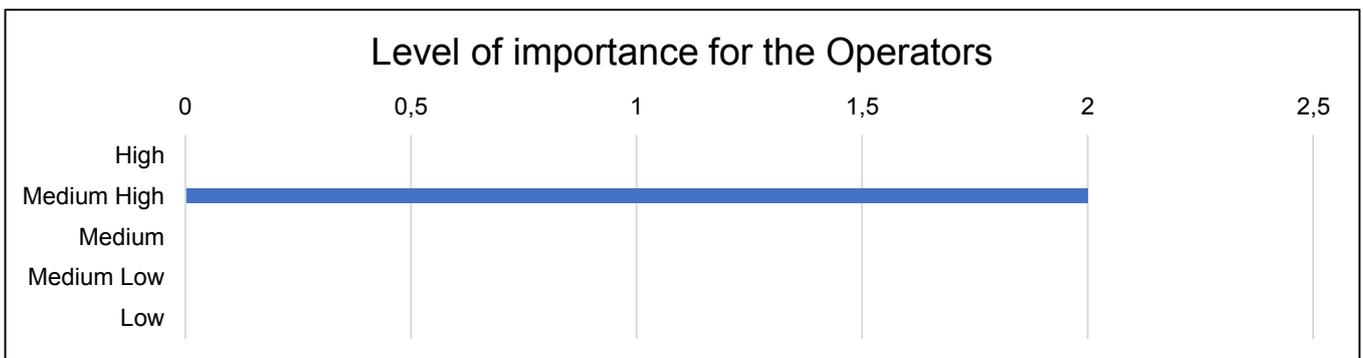
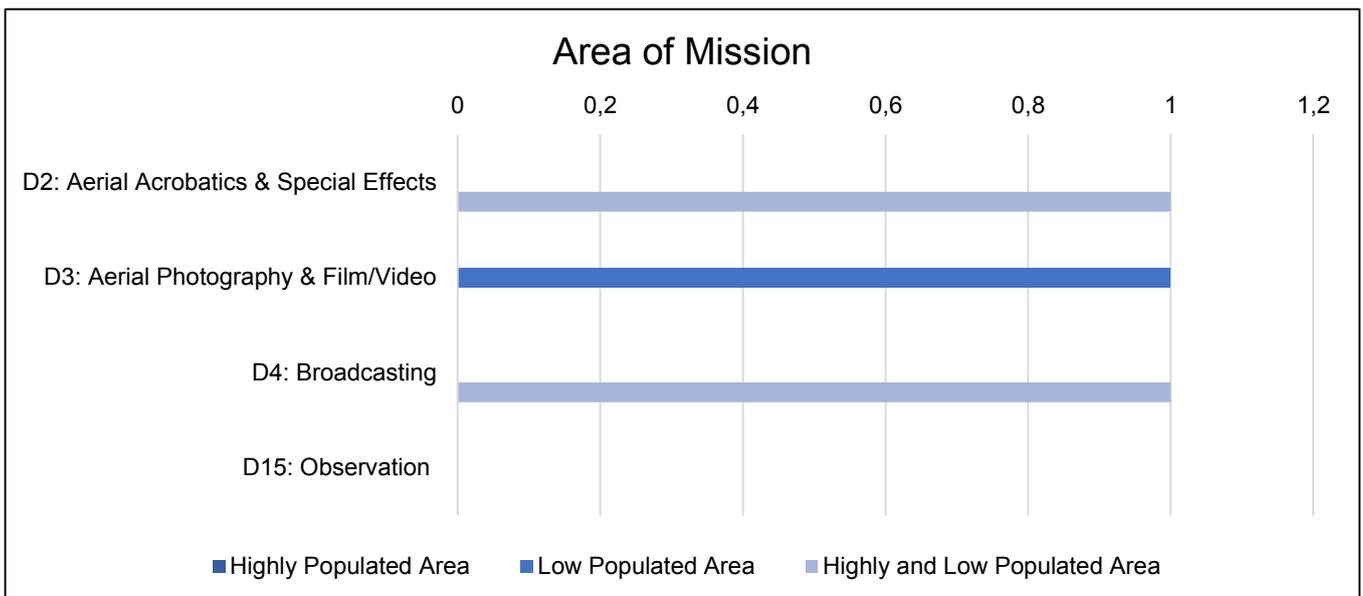
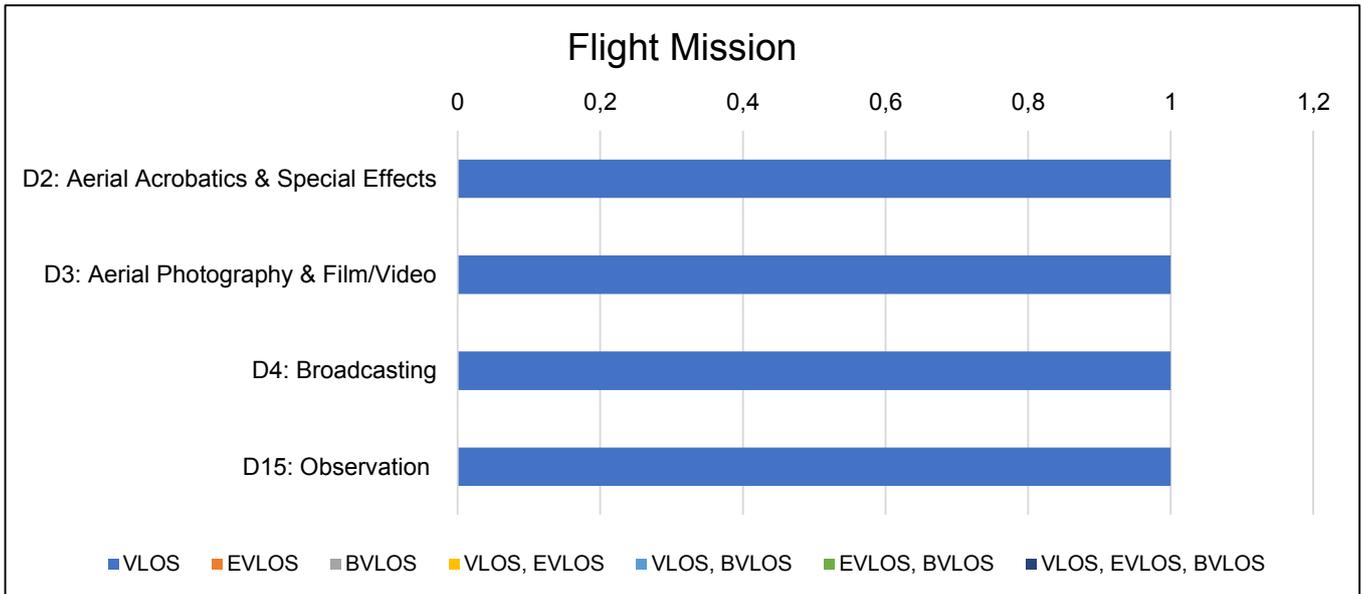
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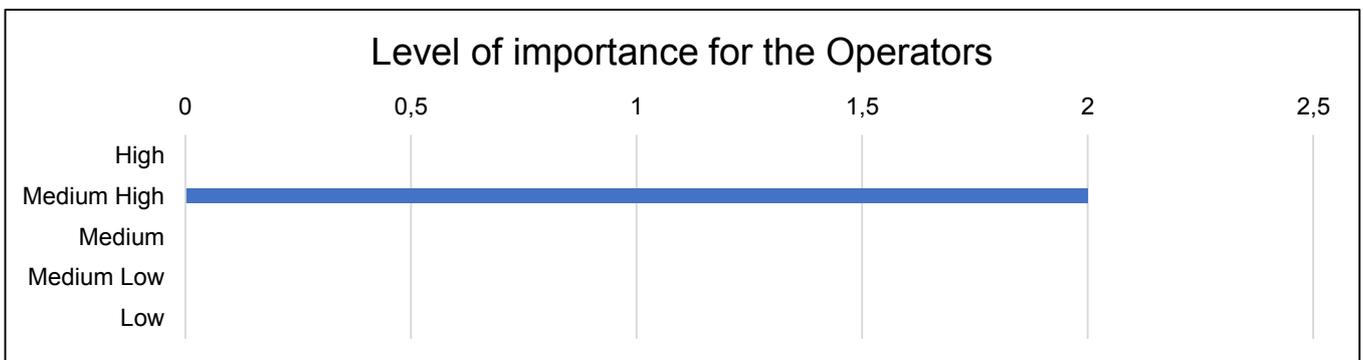
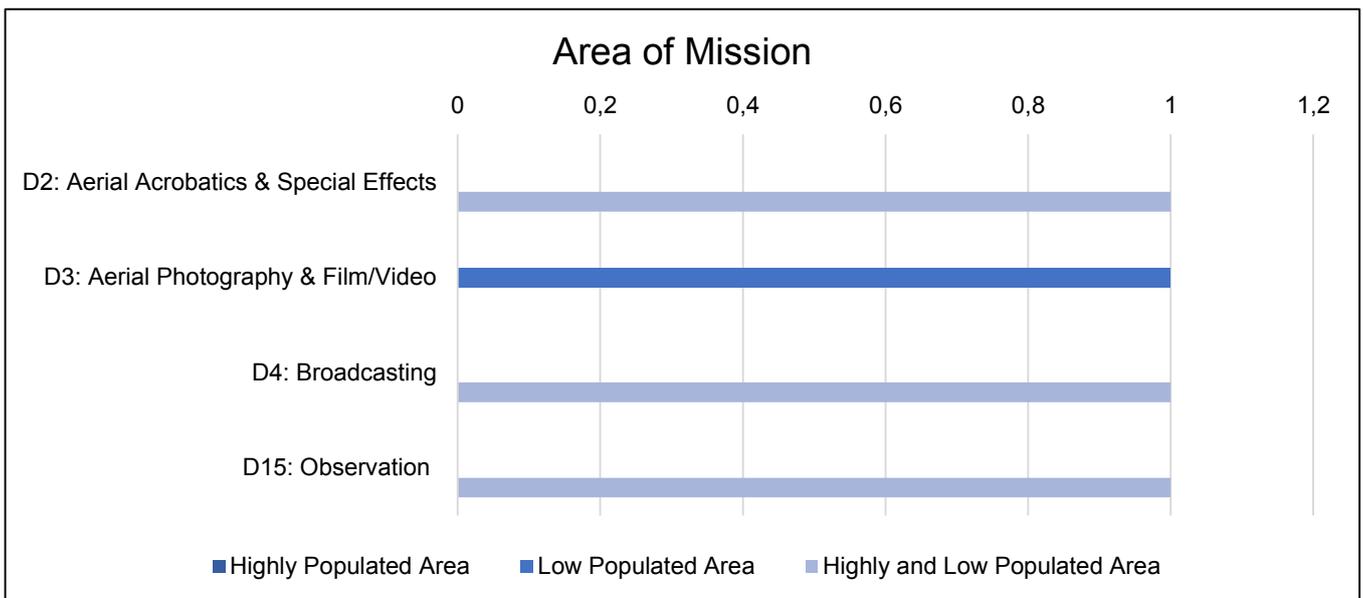
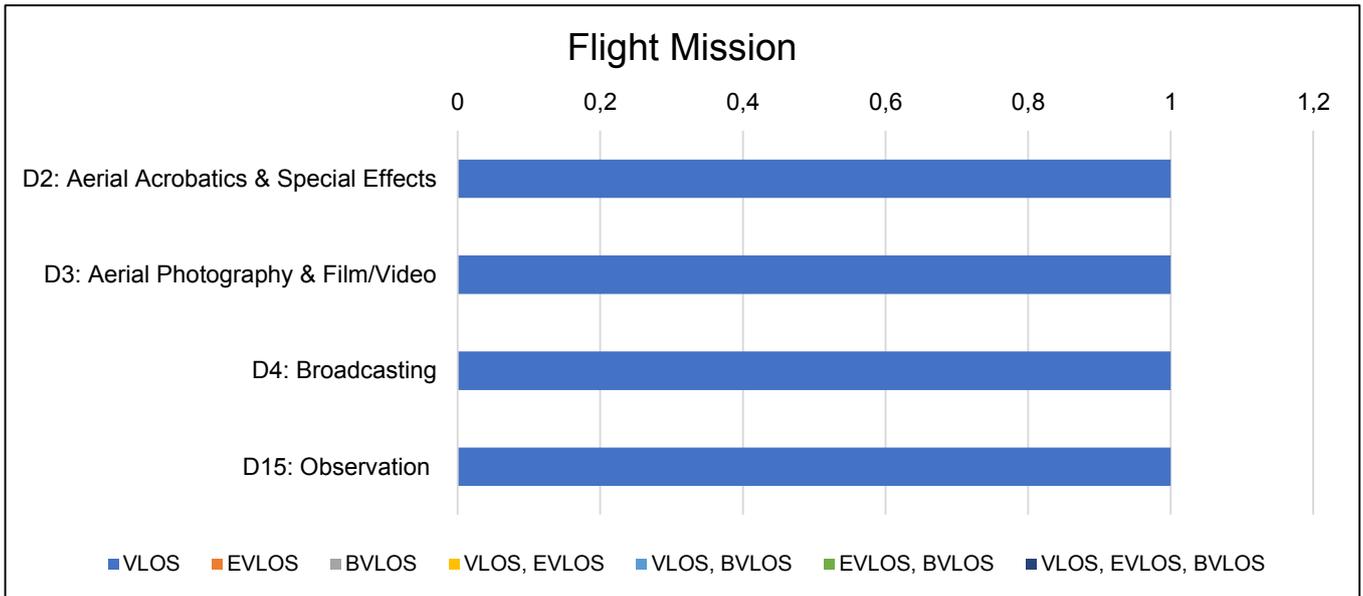
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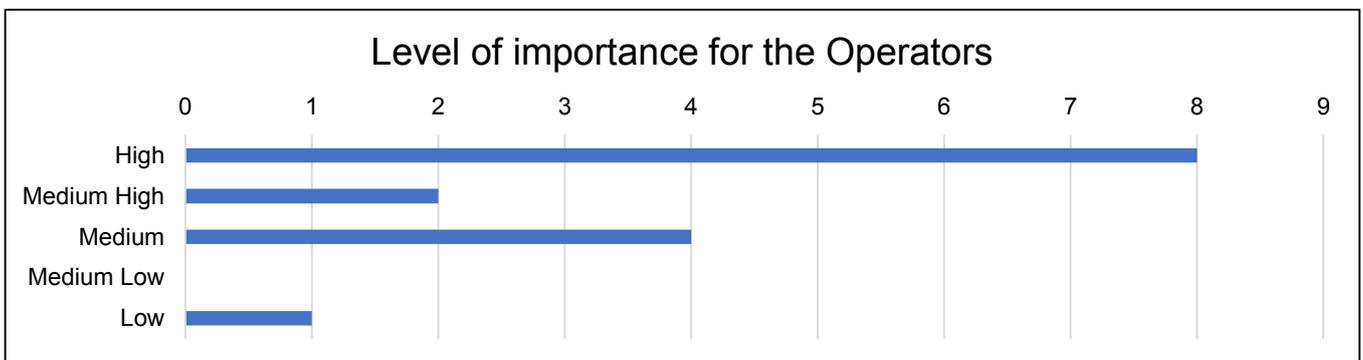
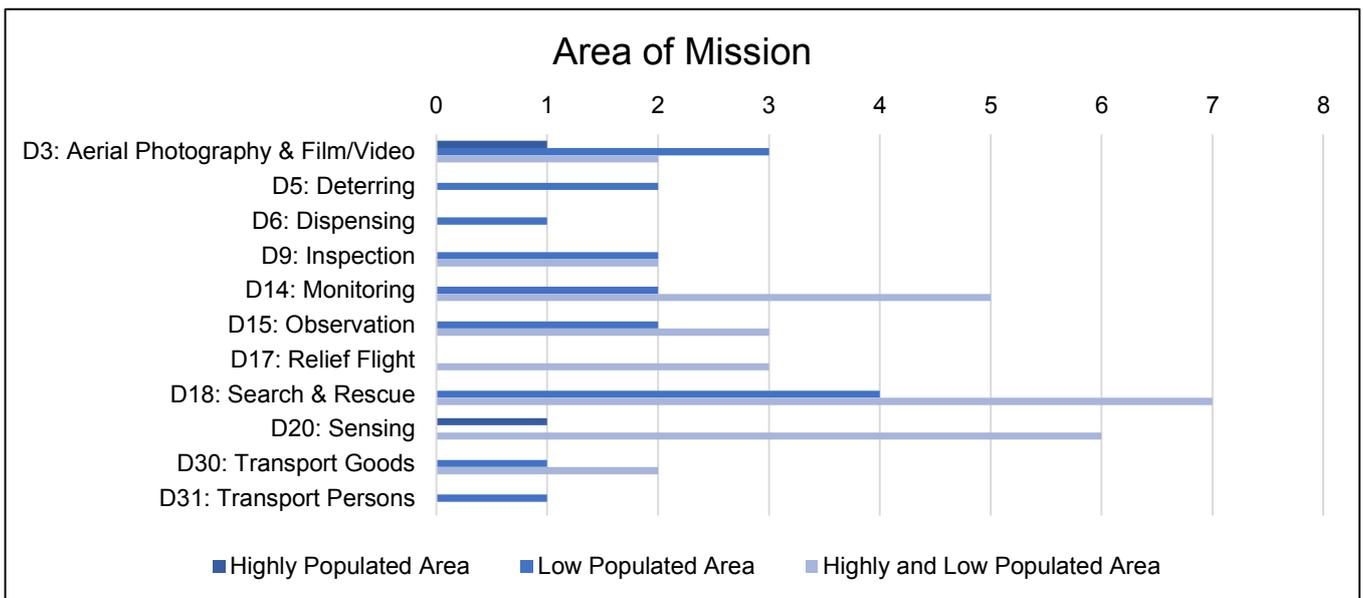
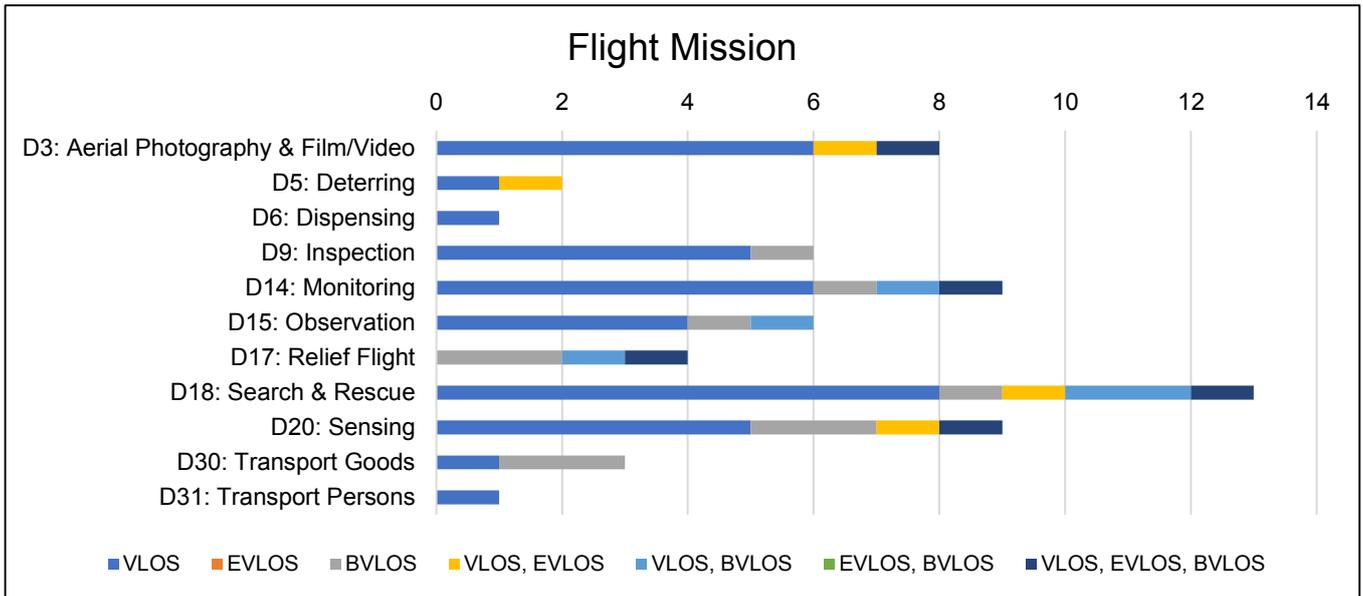
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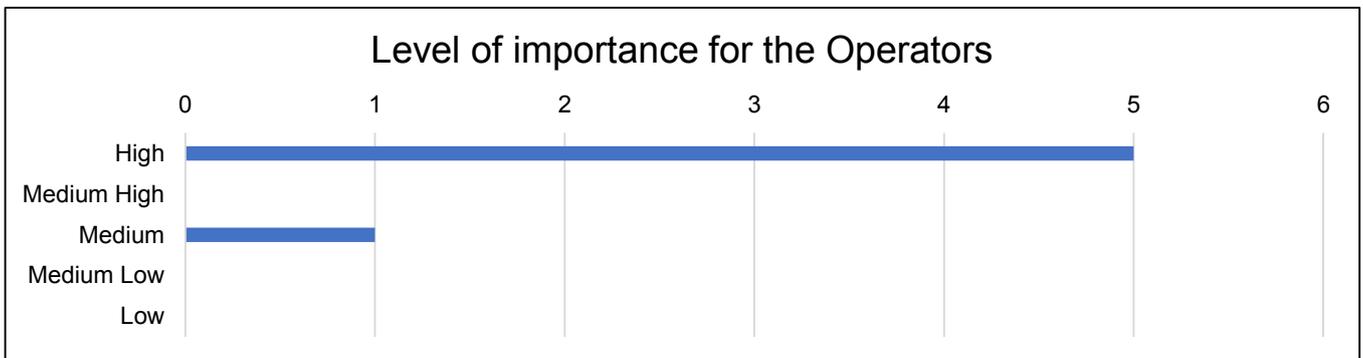
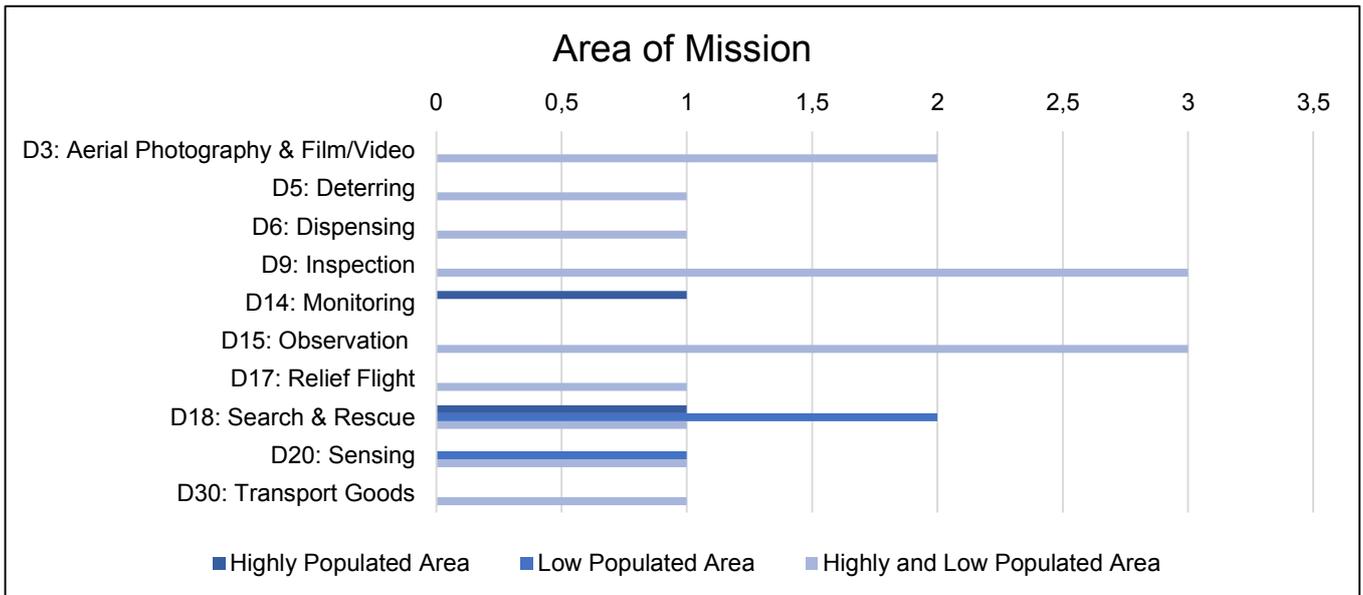
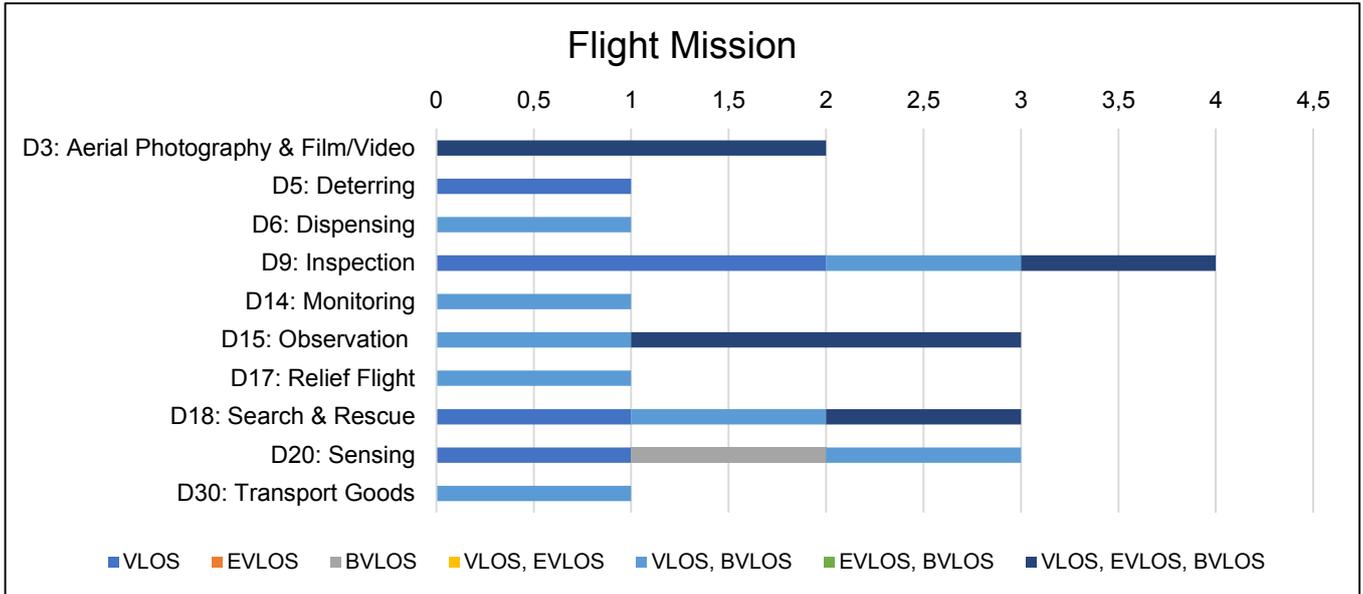
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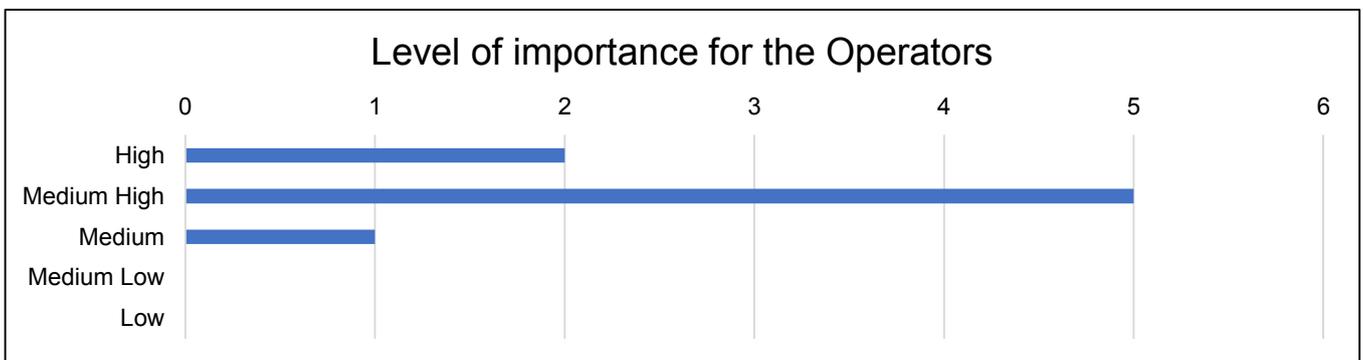
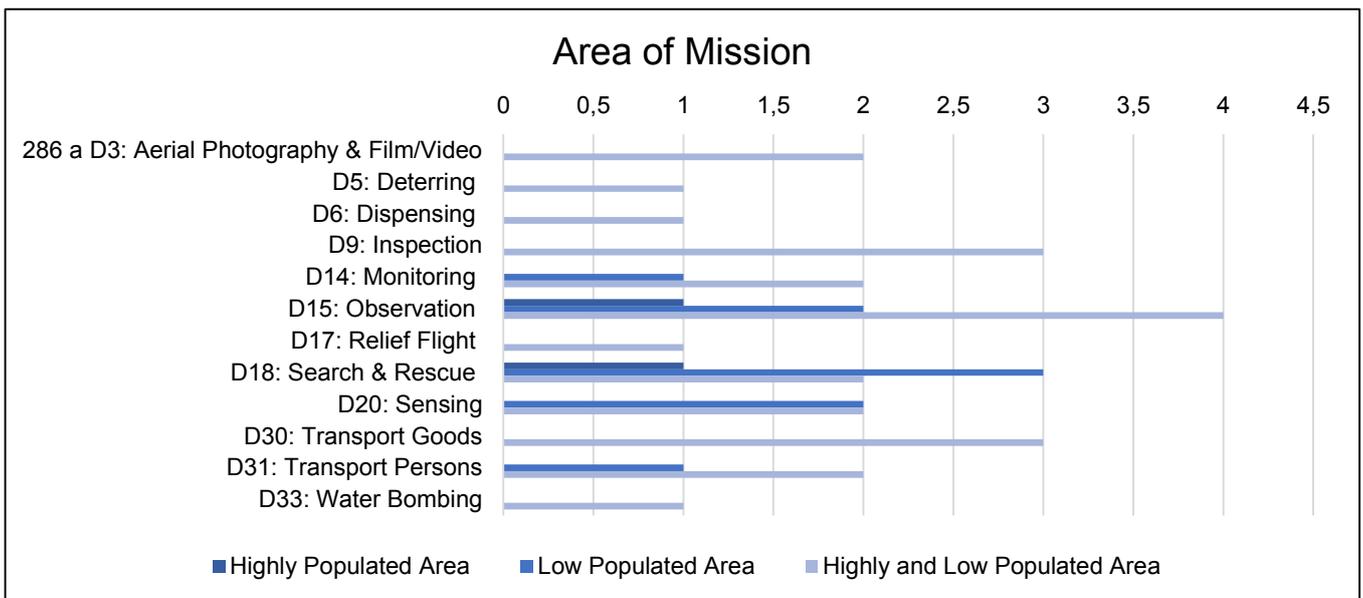
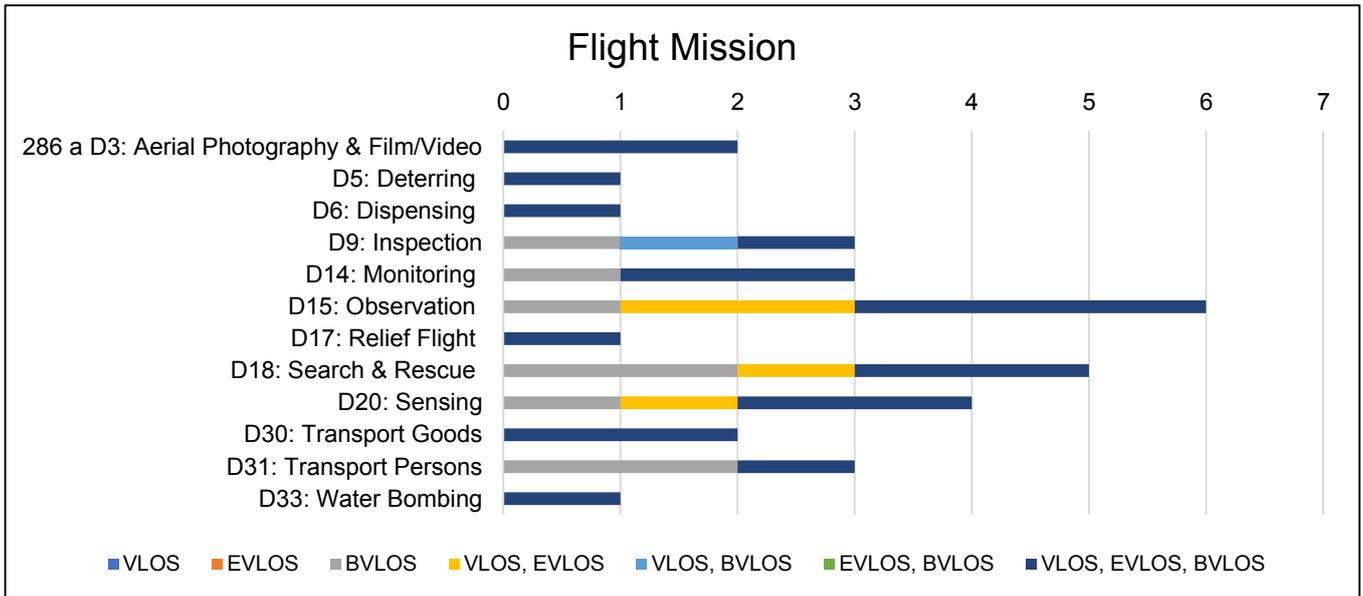
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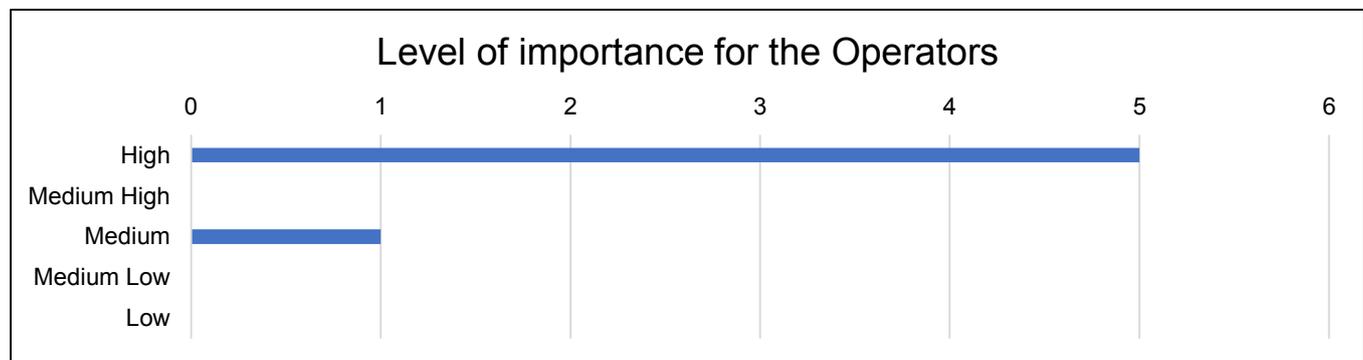
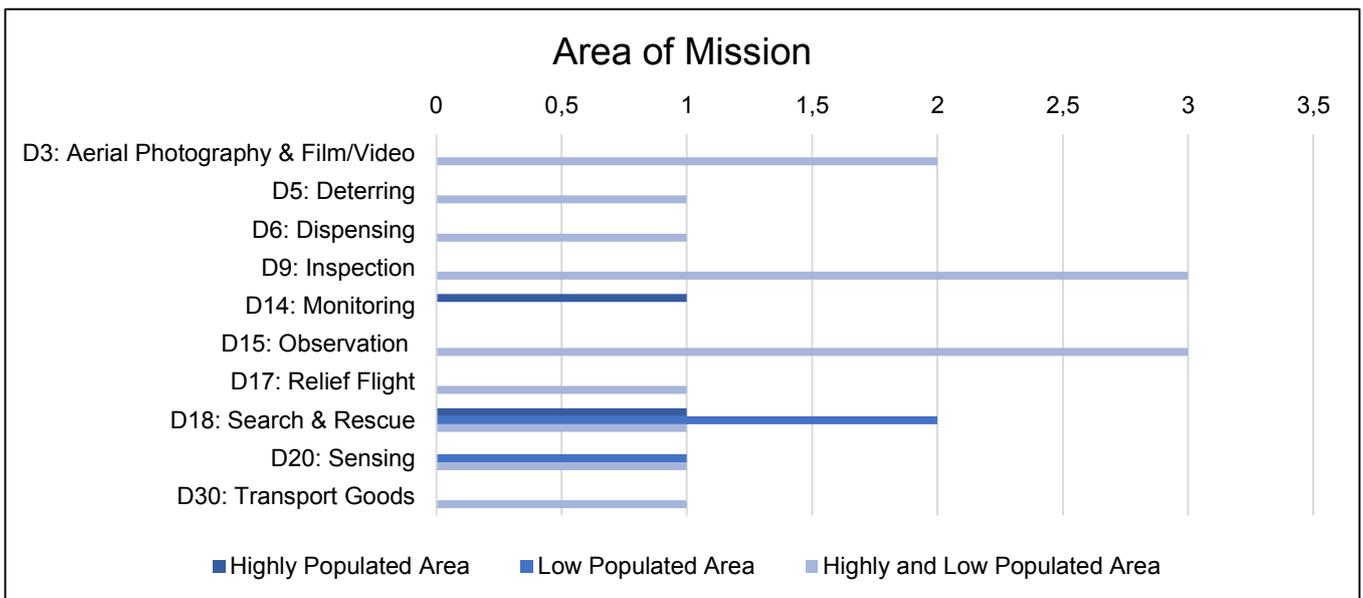
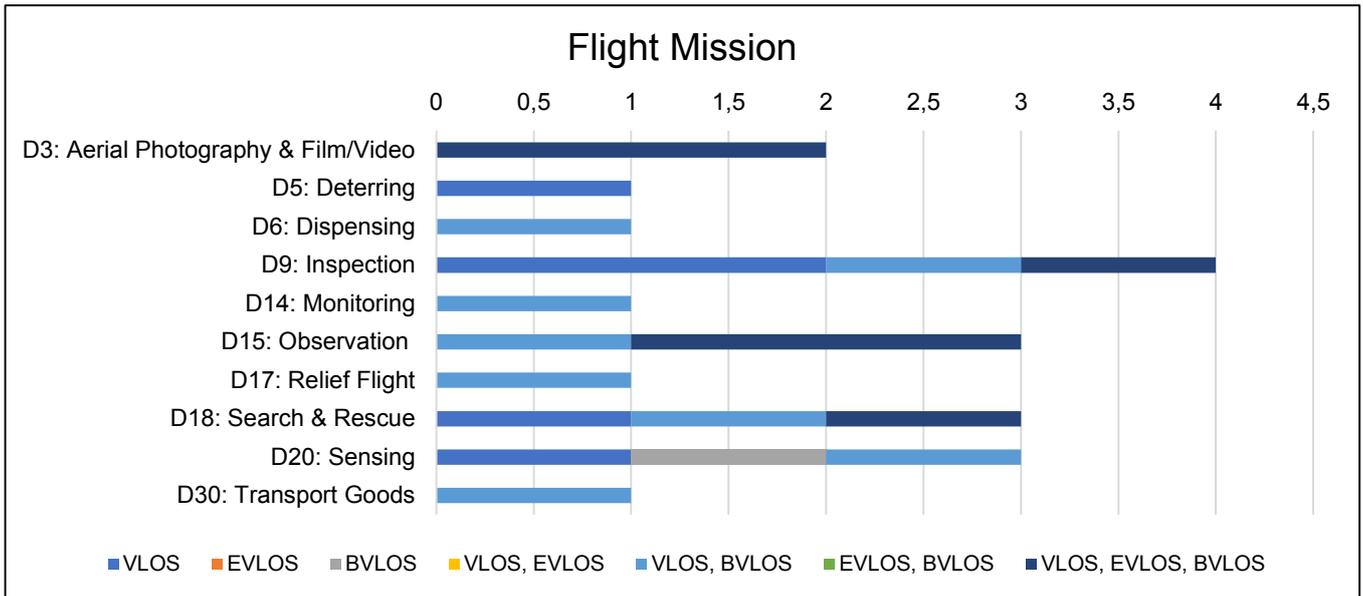
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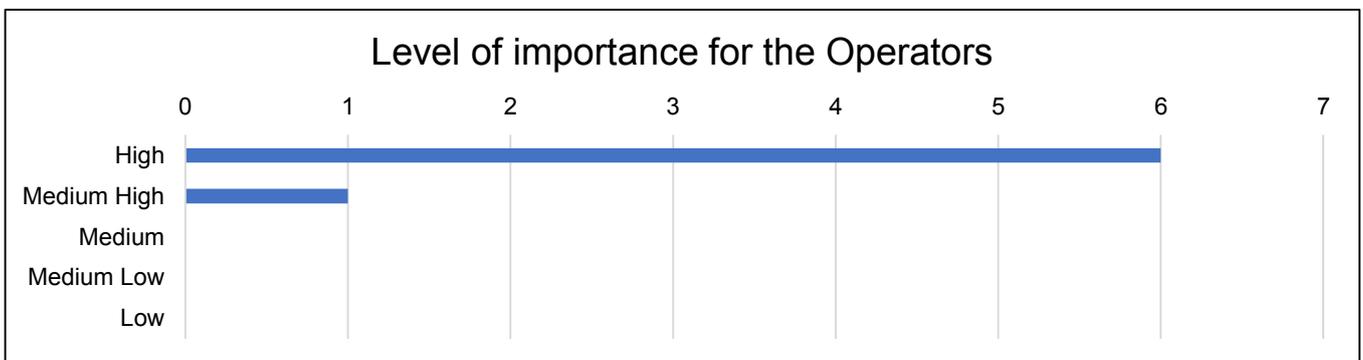
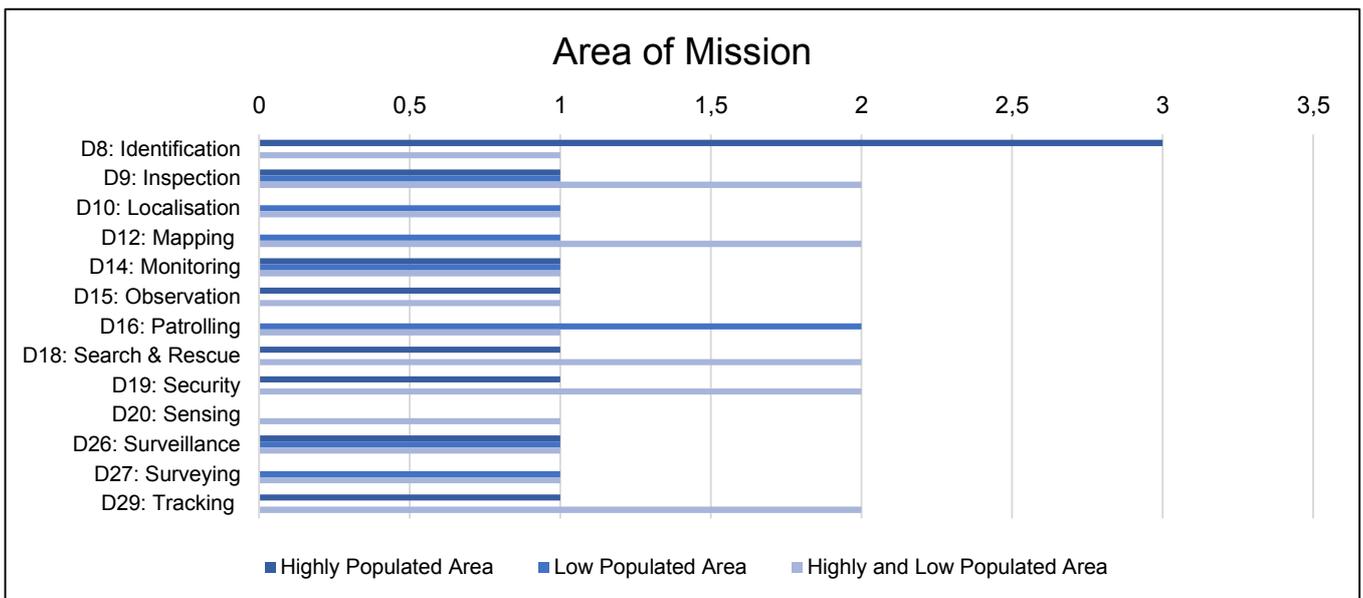
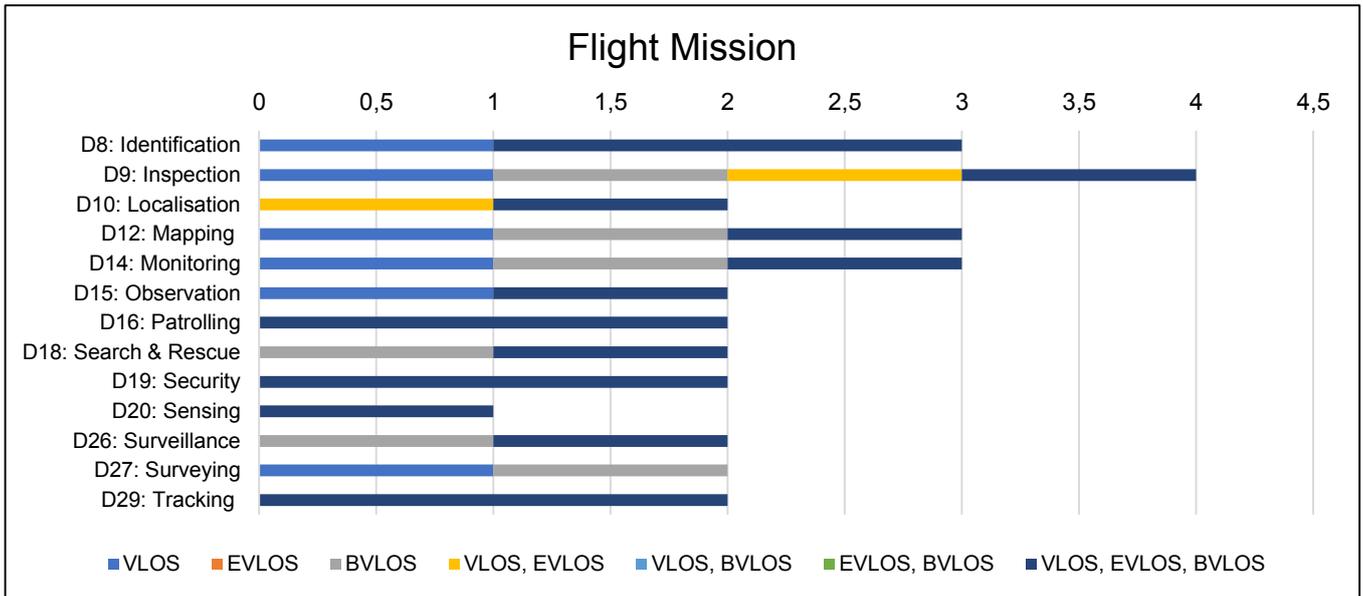
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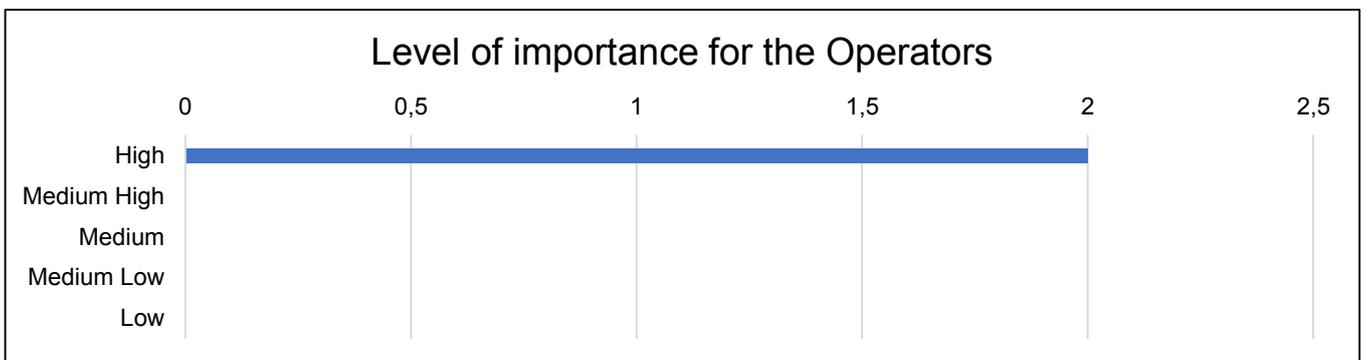
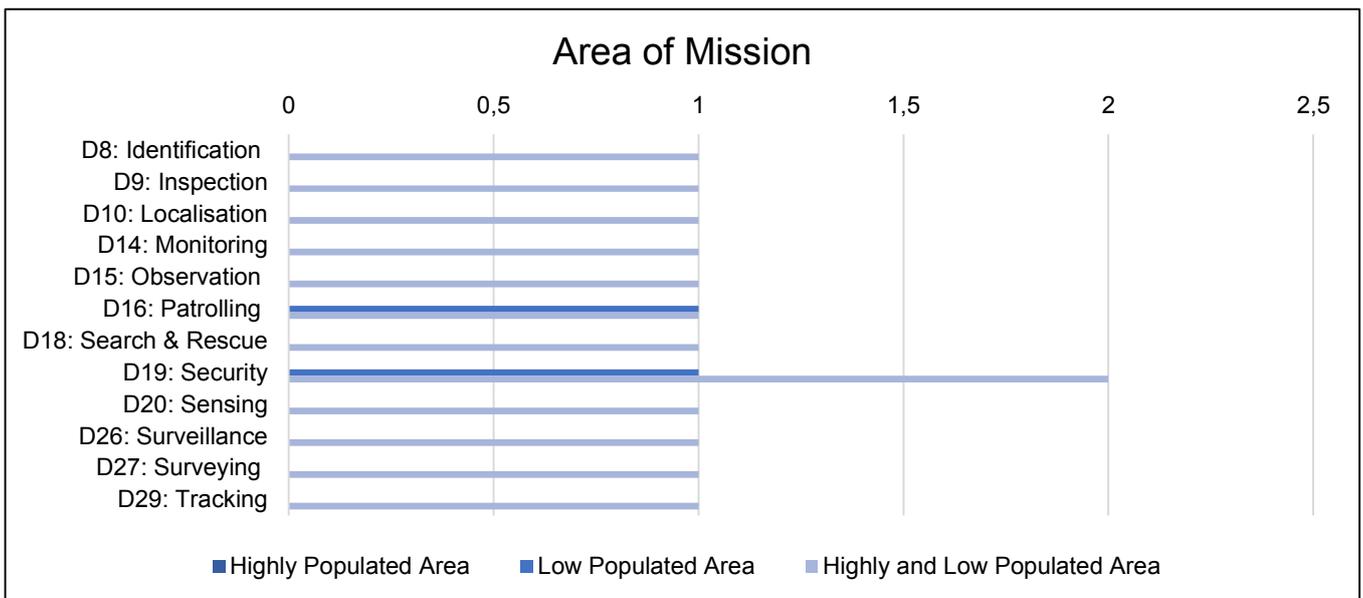
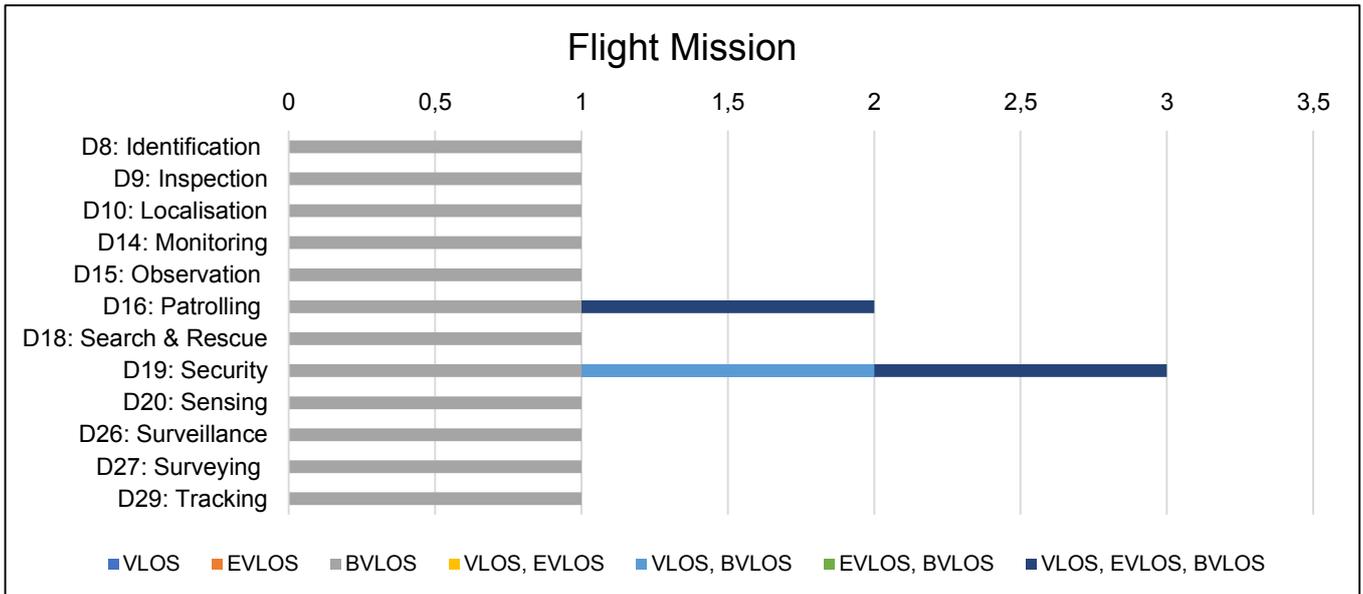
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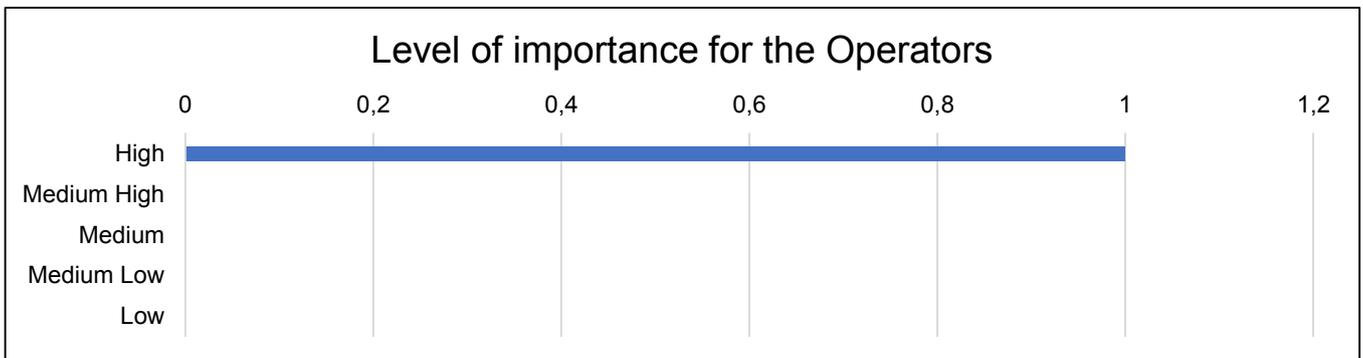
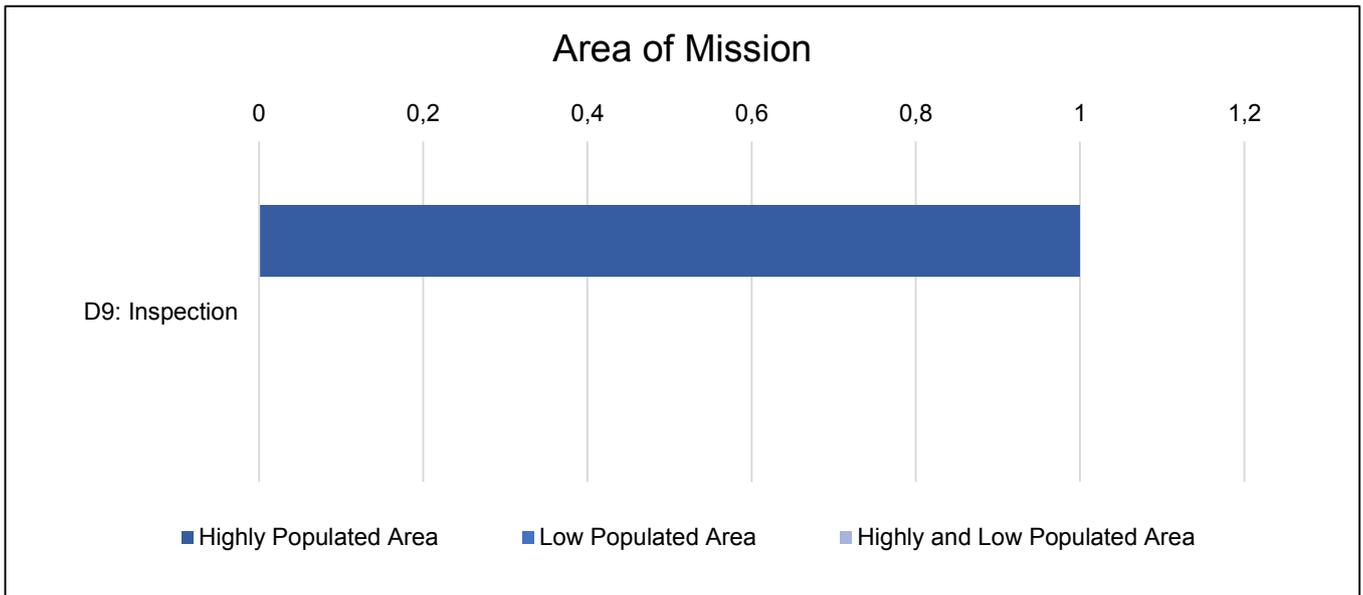
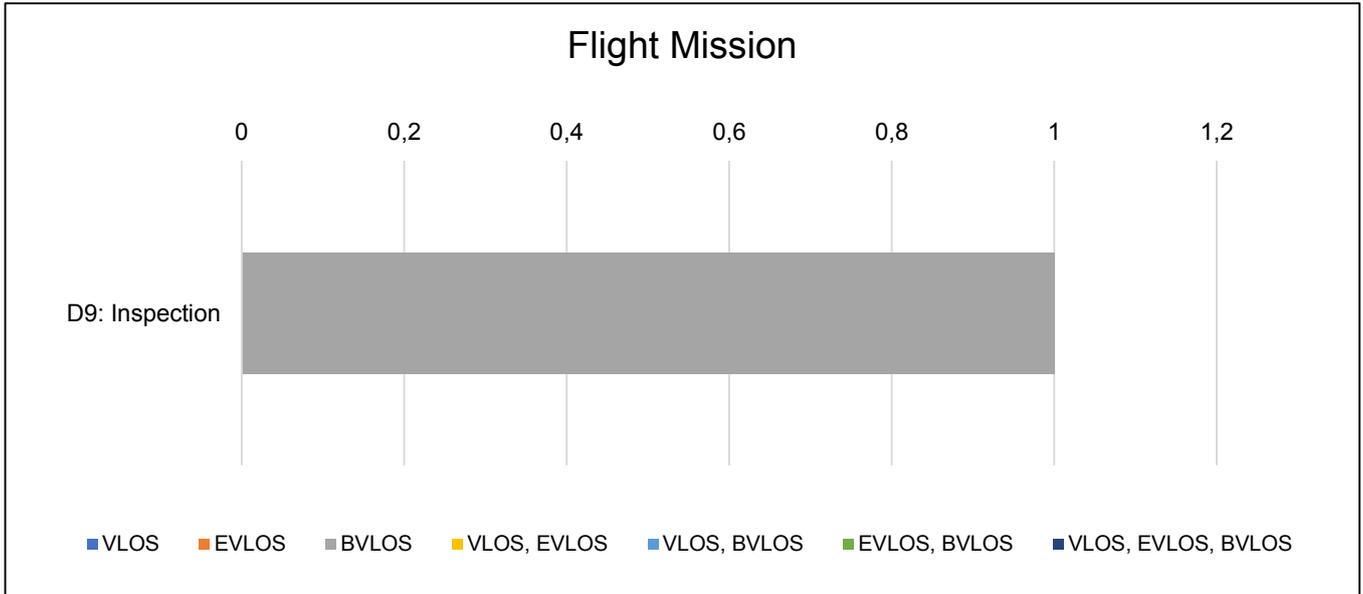
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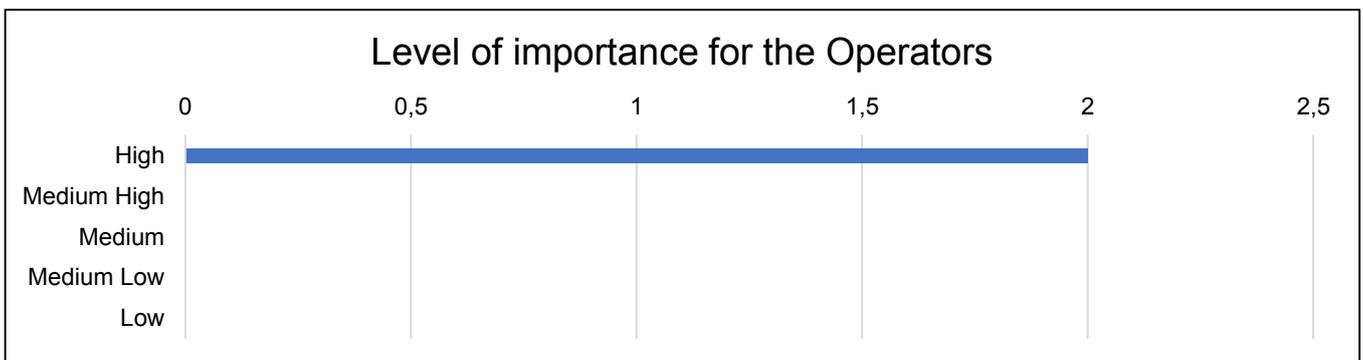
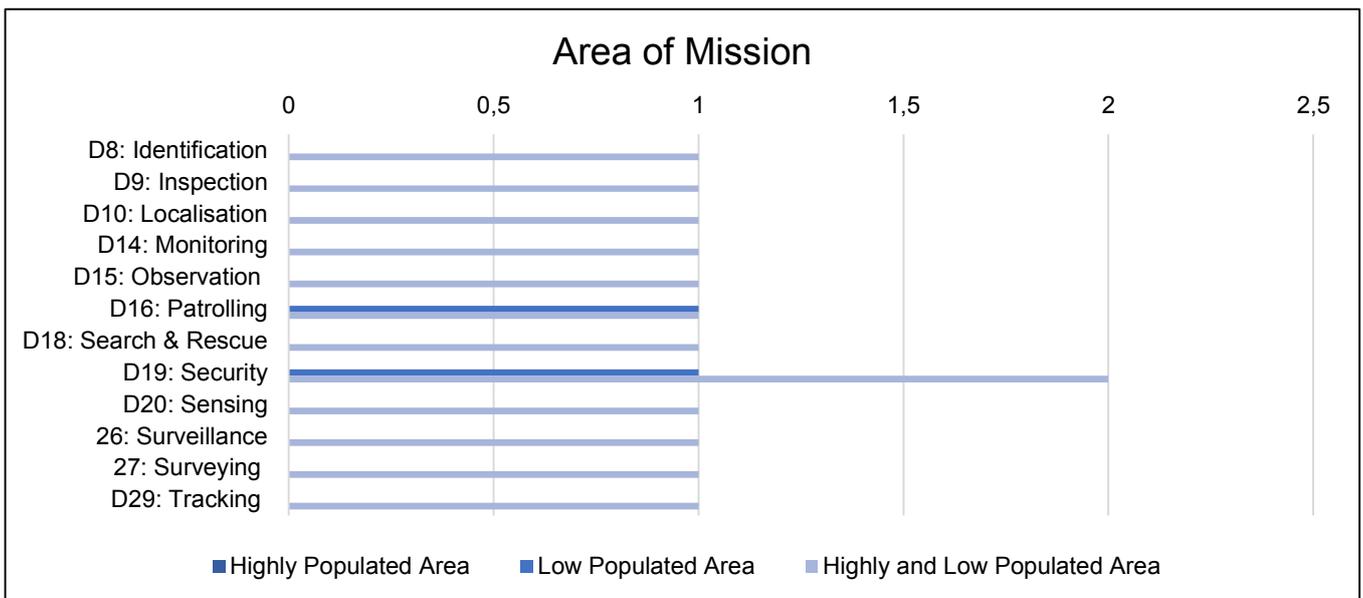
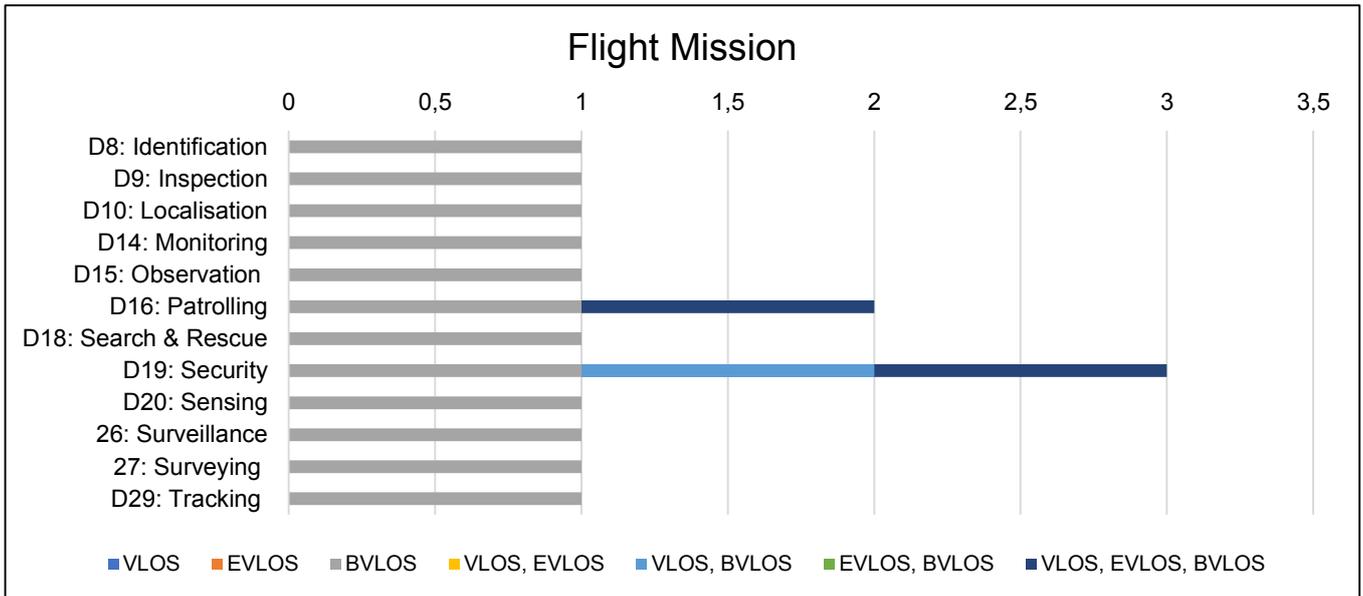
## Survey on Drone Operations & Safety Risk Analysis Methods



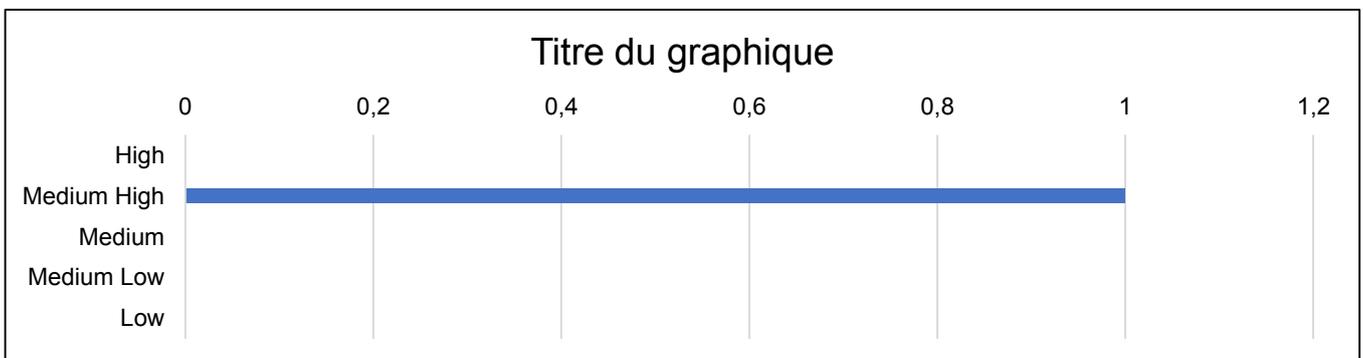
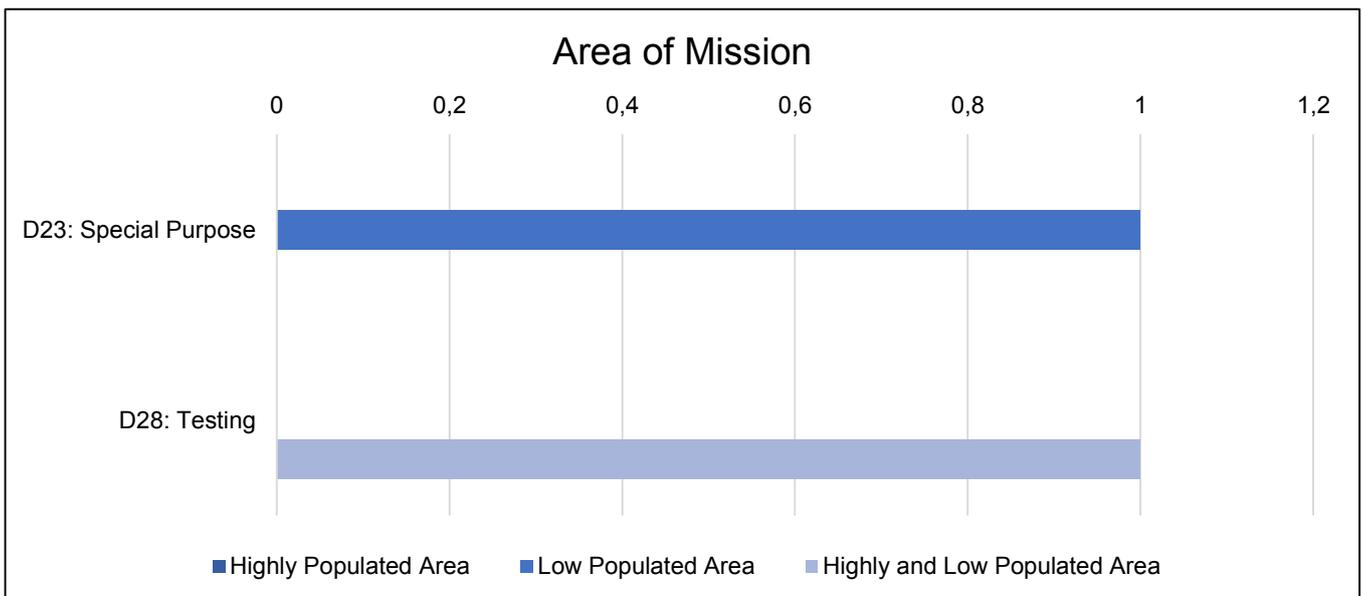
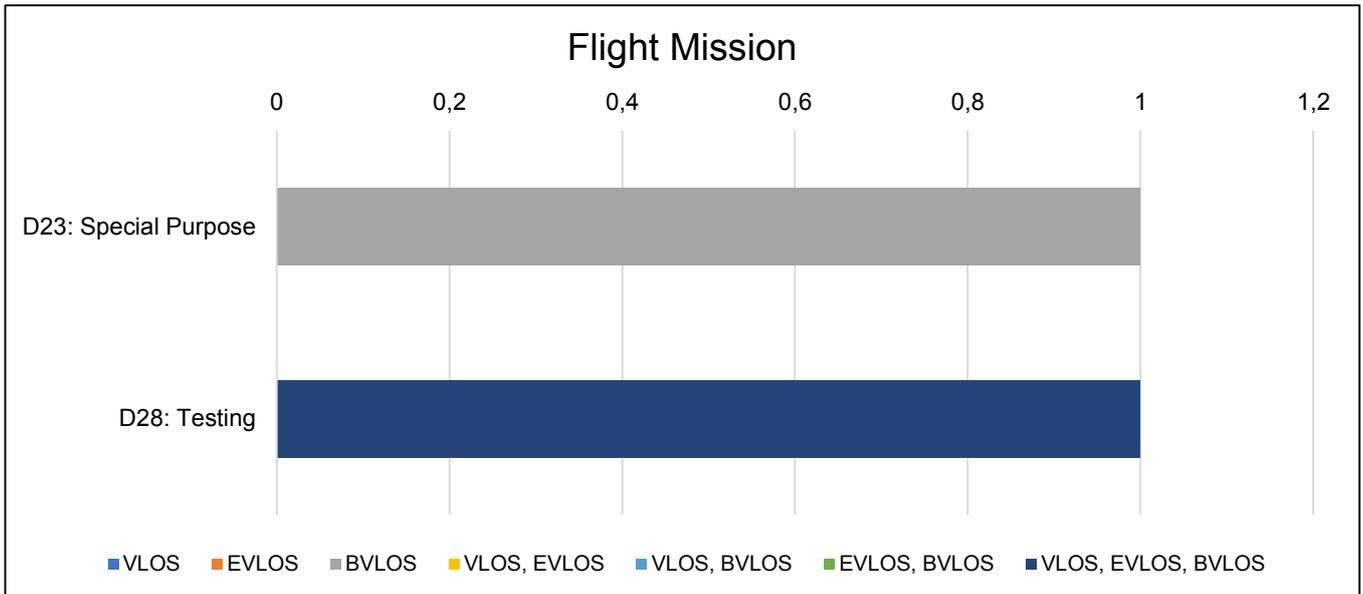
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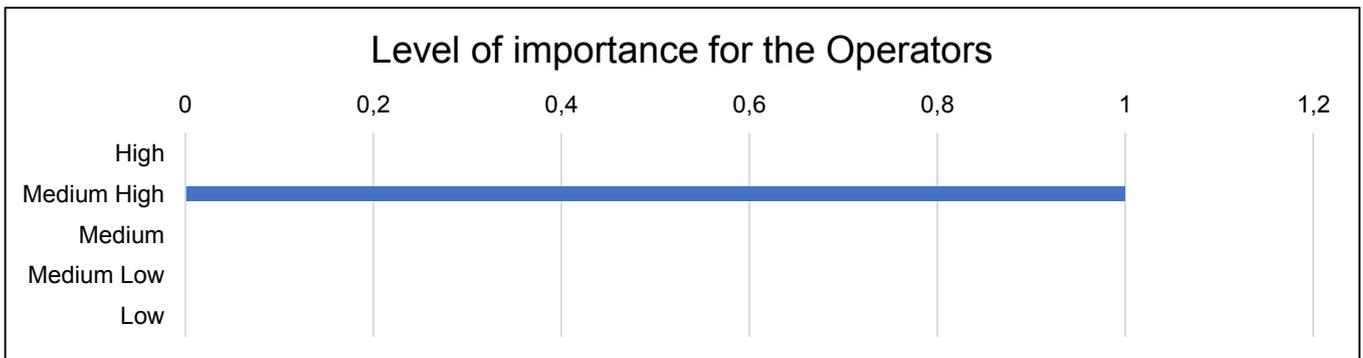
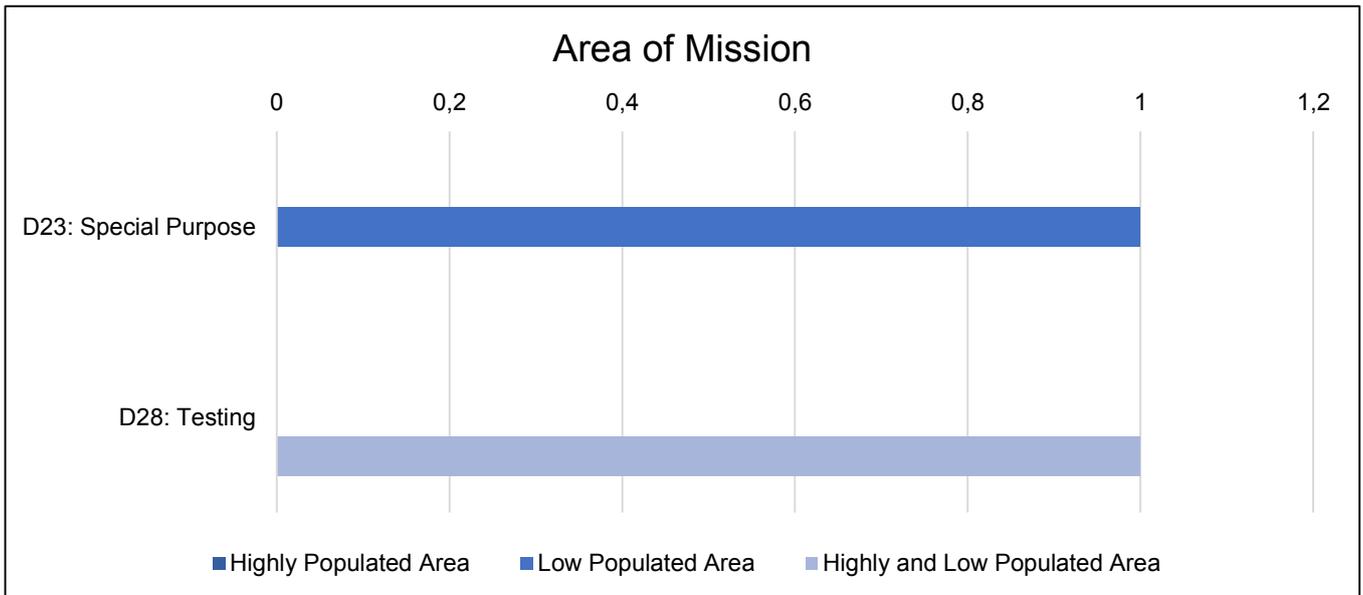
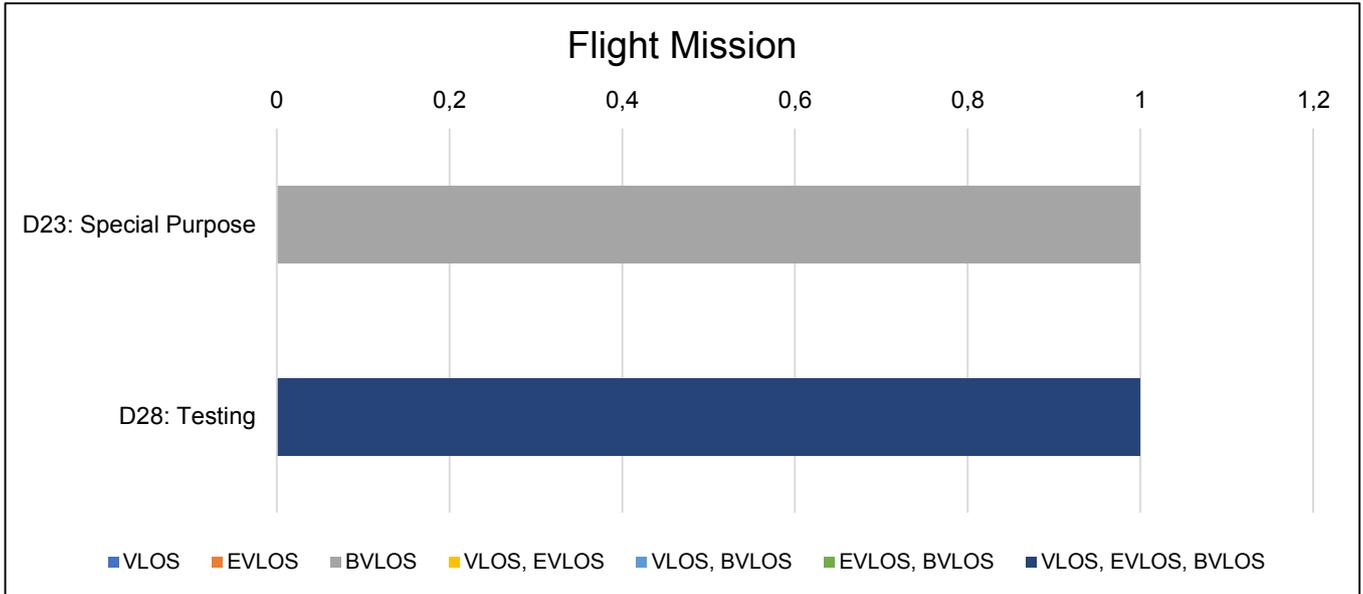
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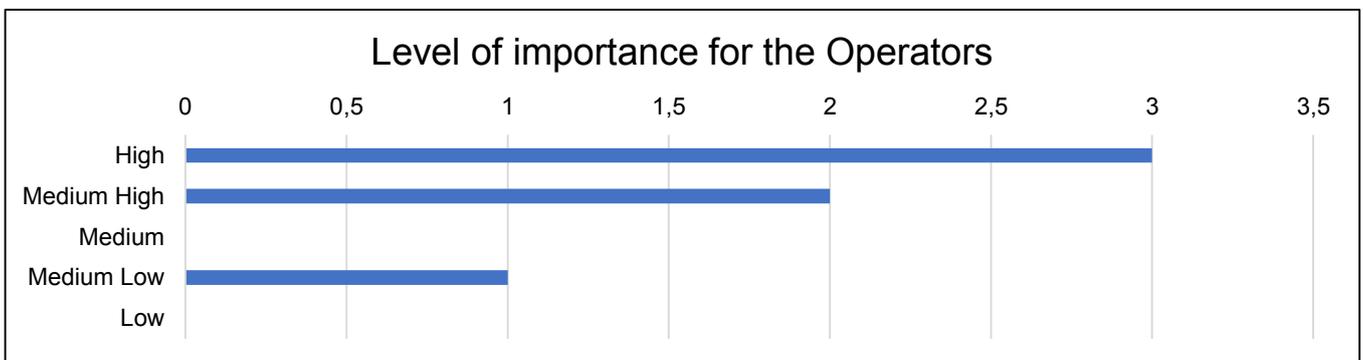
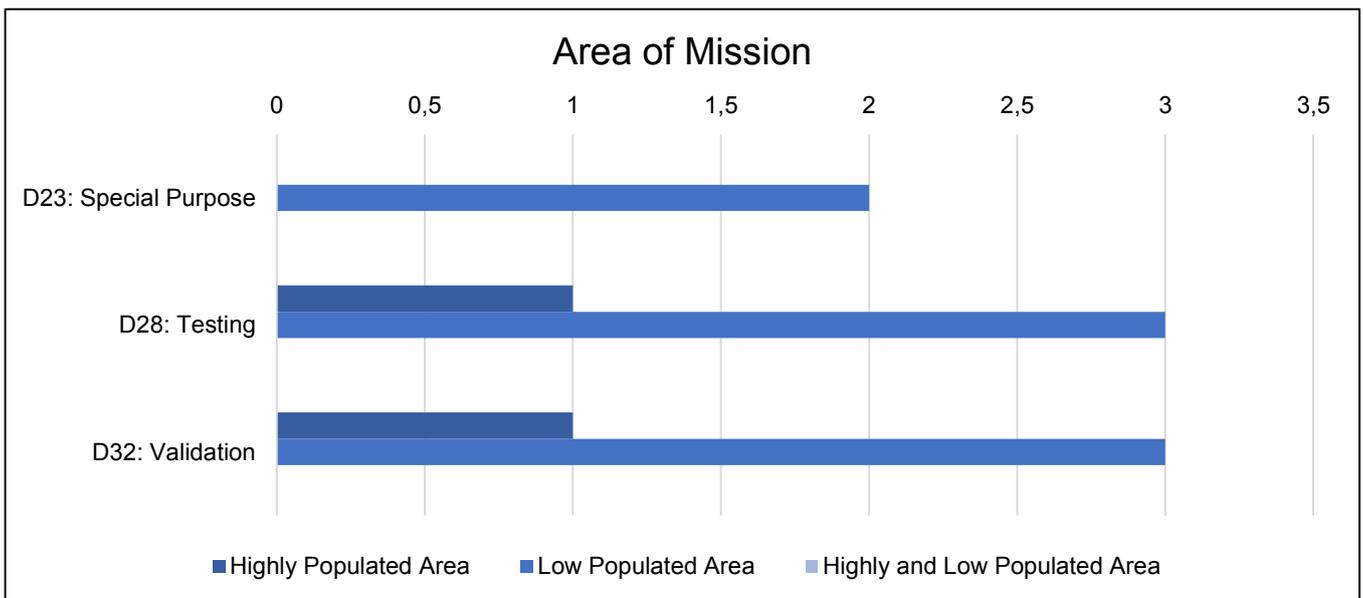
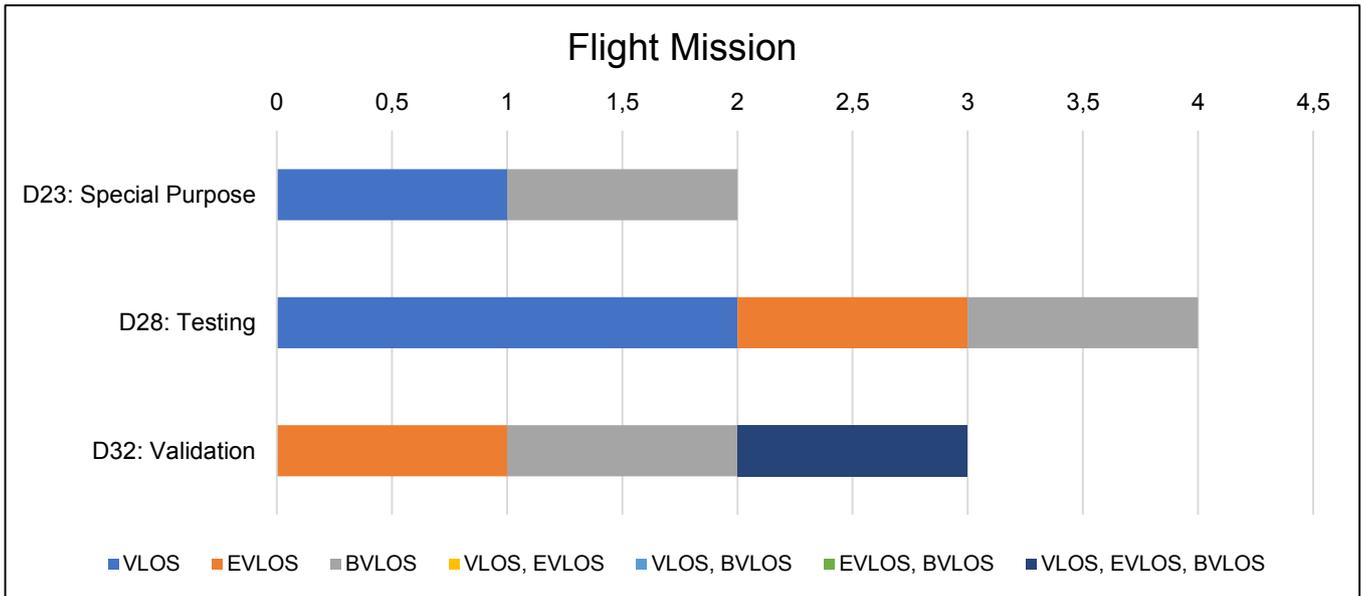
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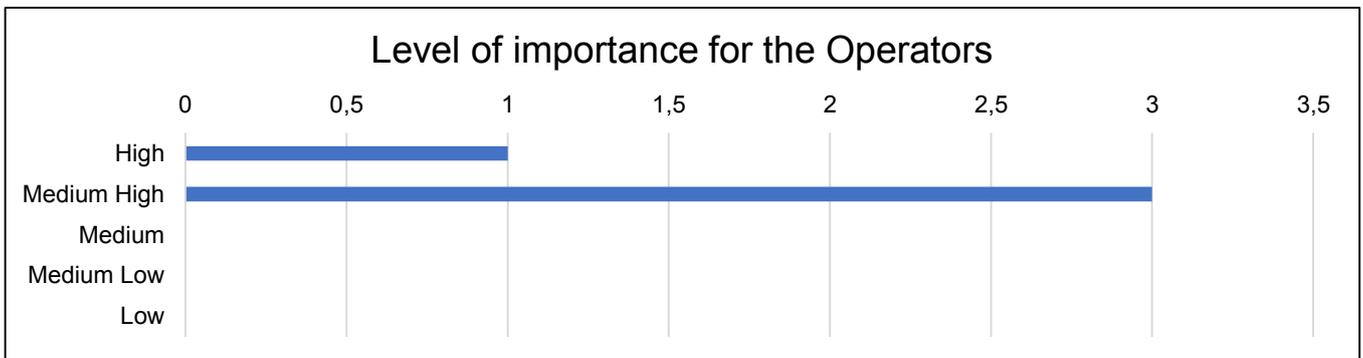
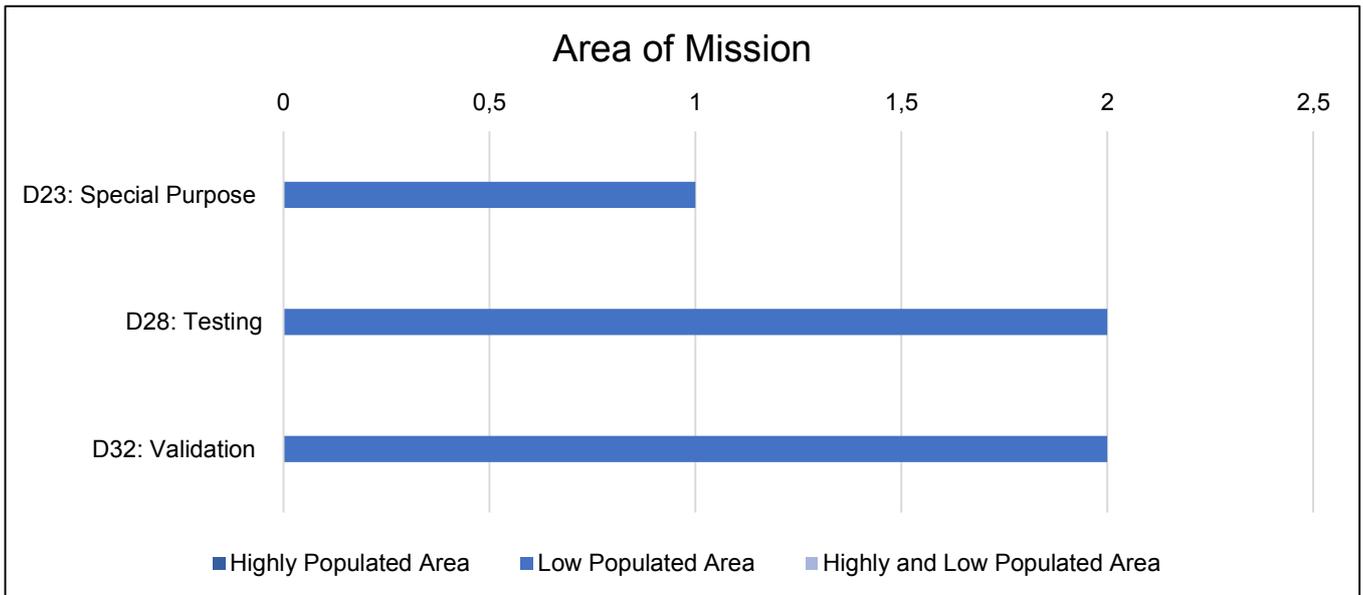
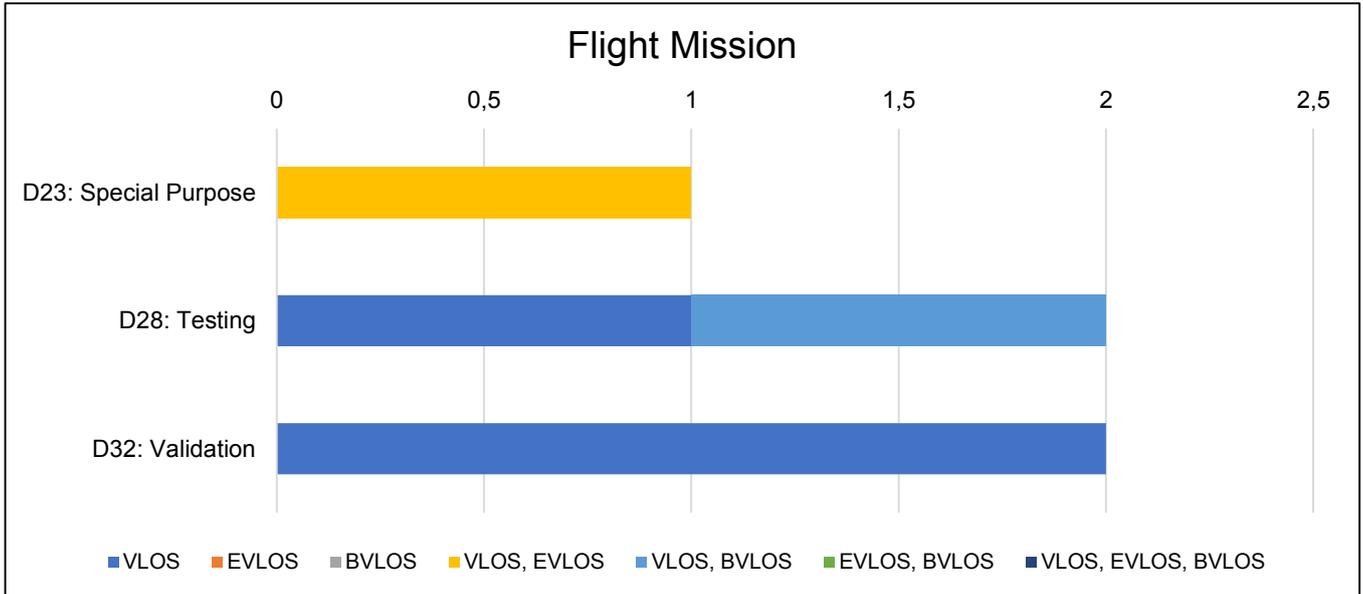
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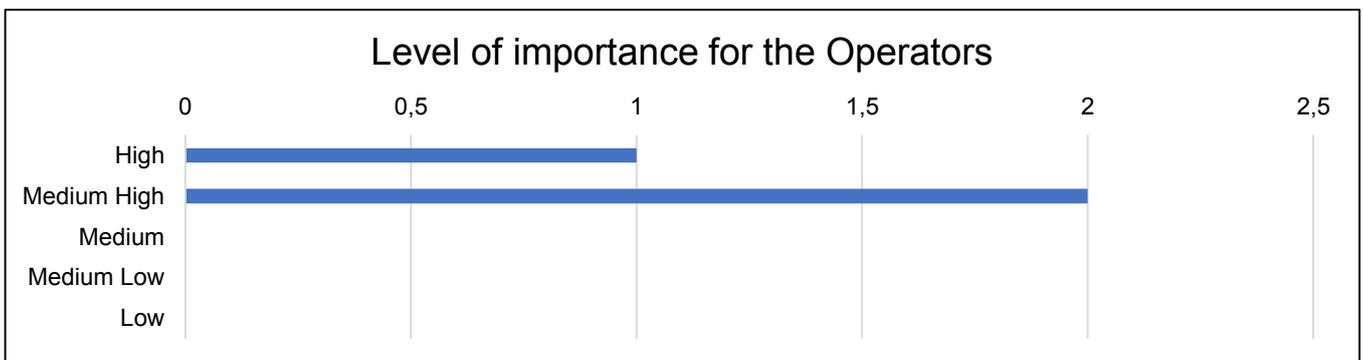
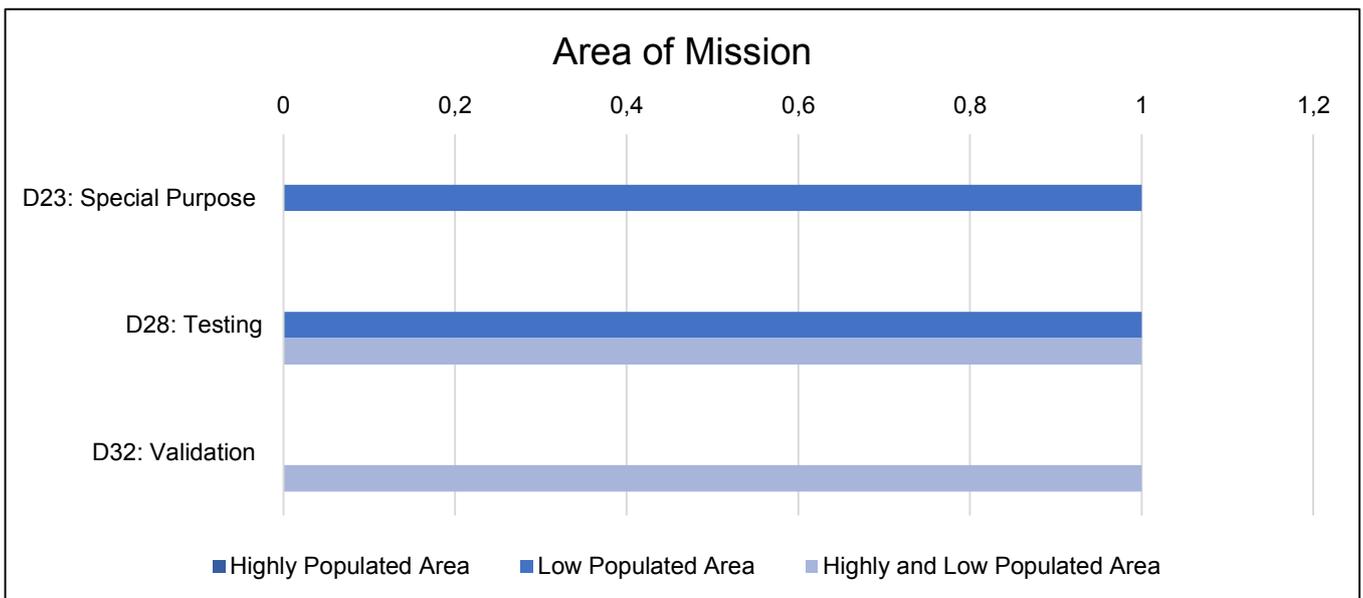
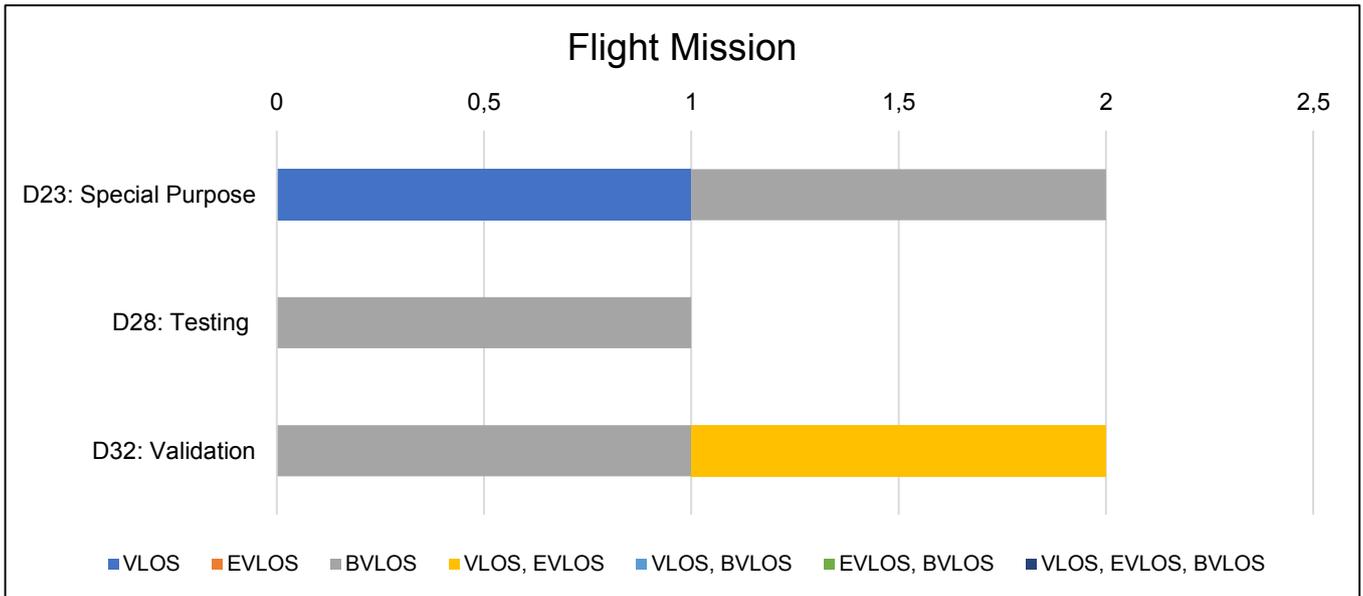
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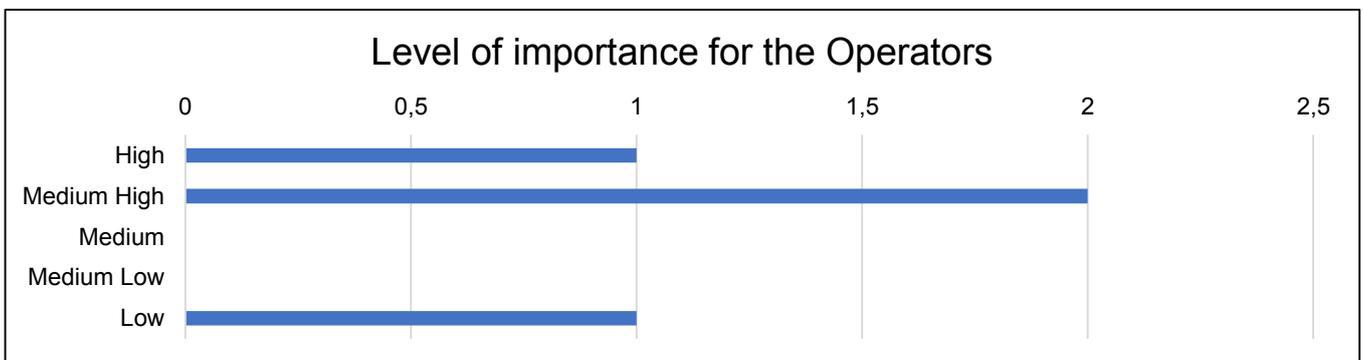
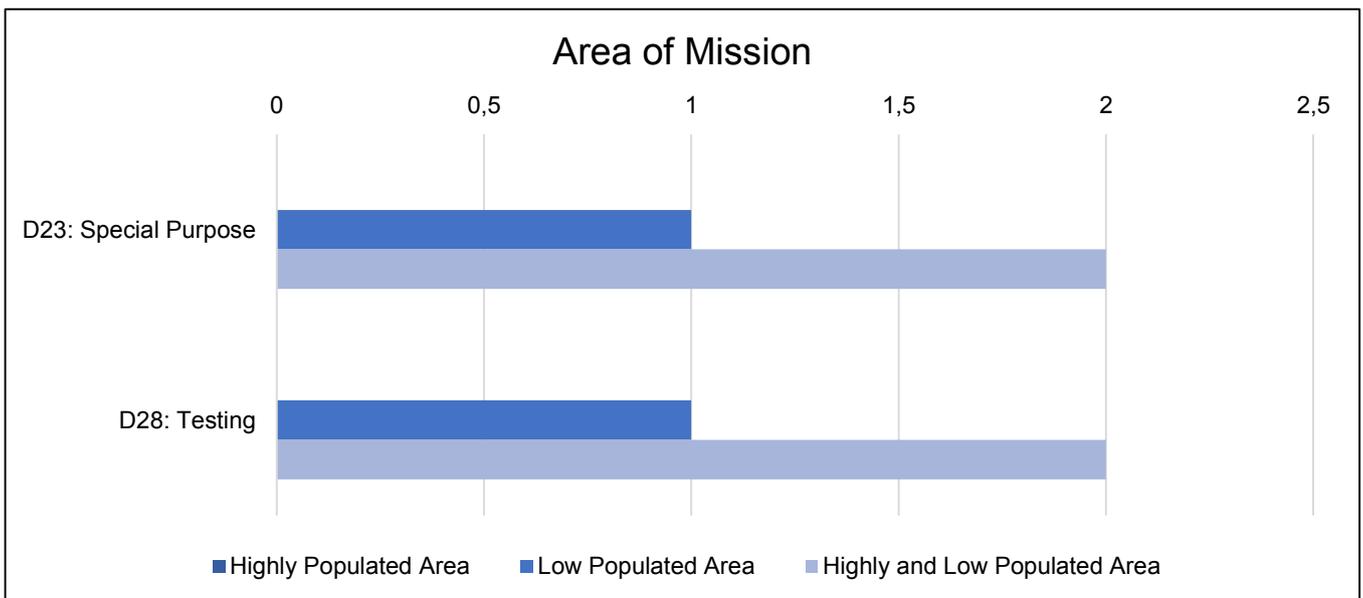
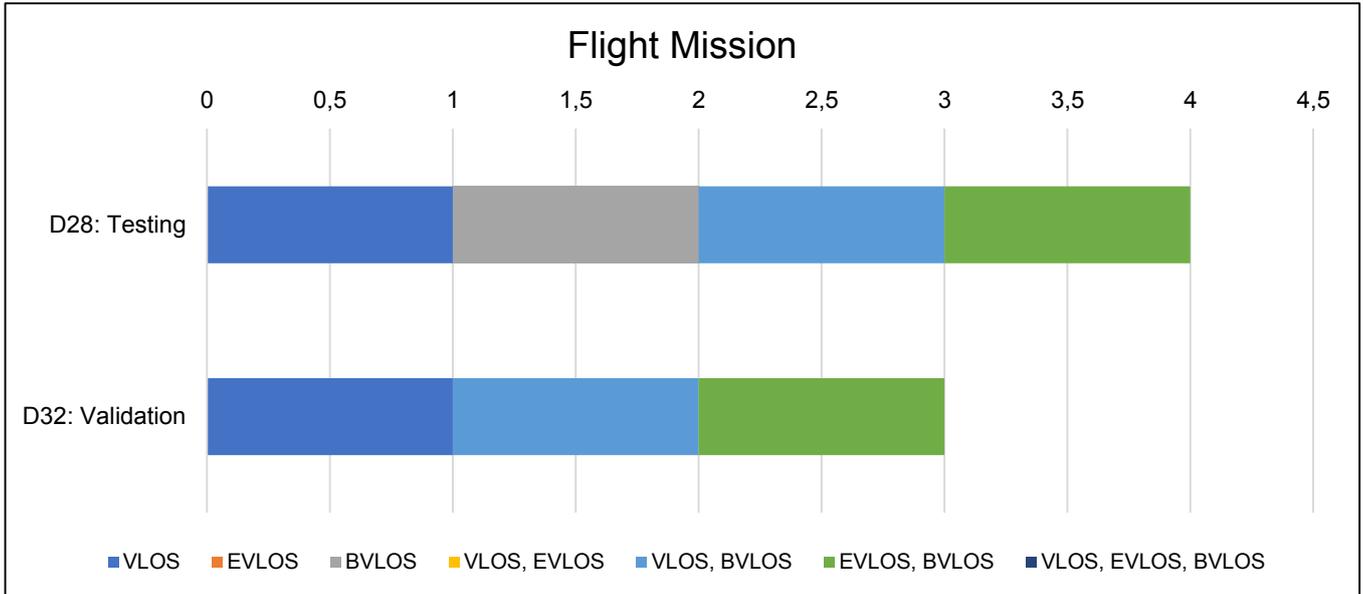
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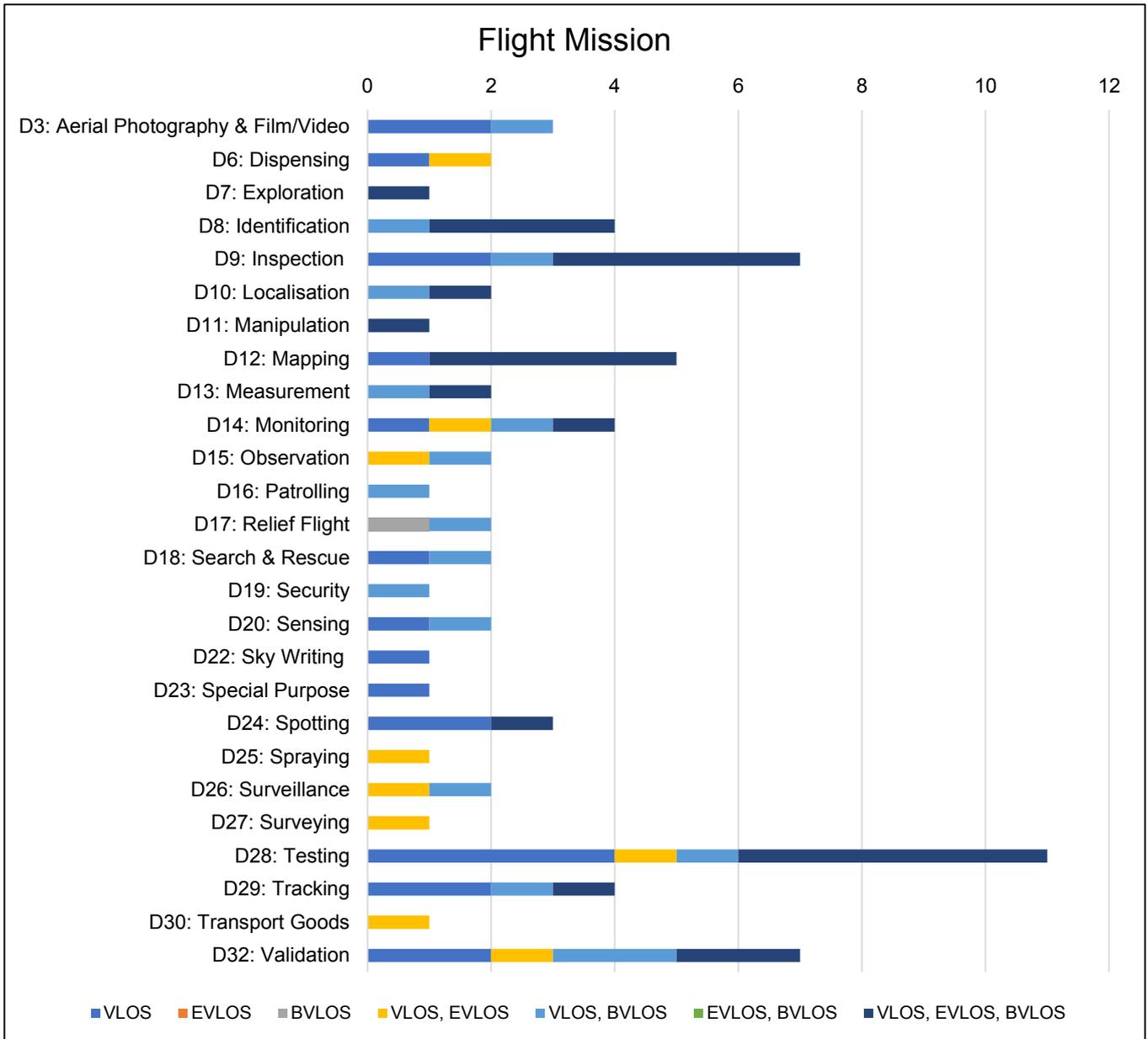
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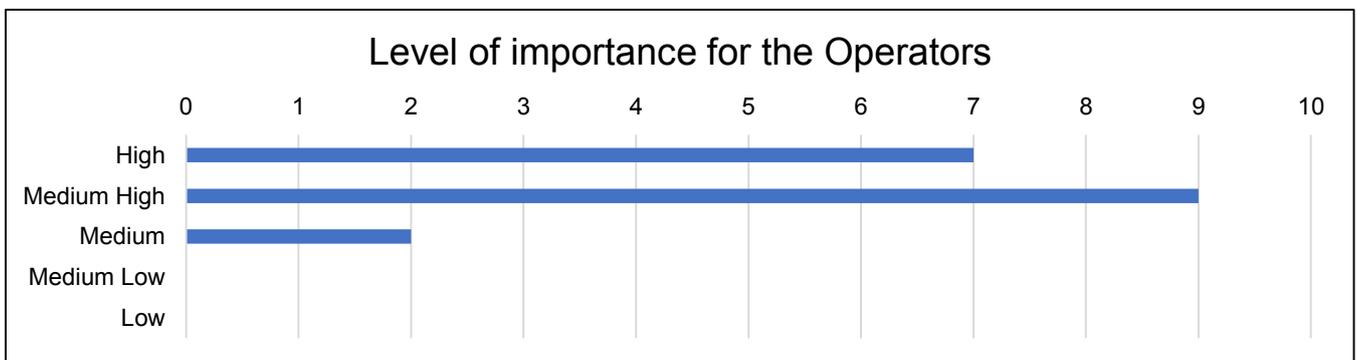
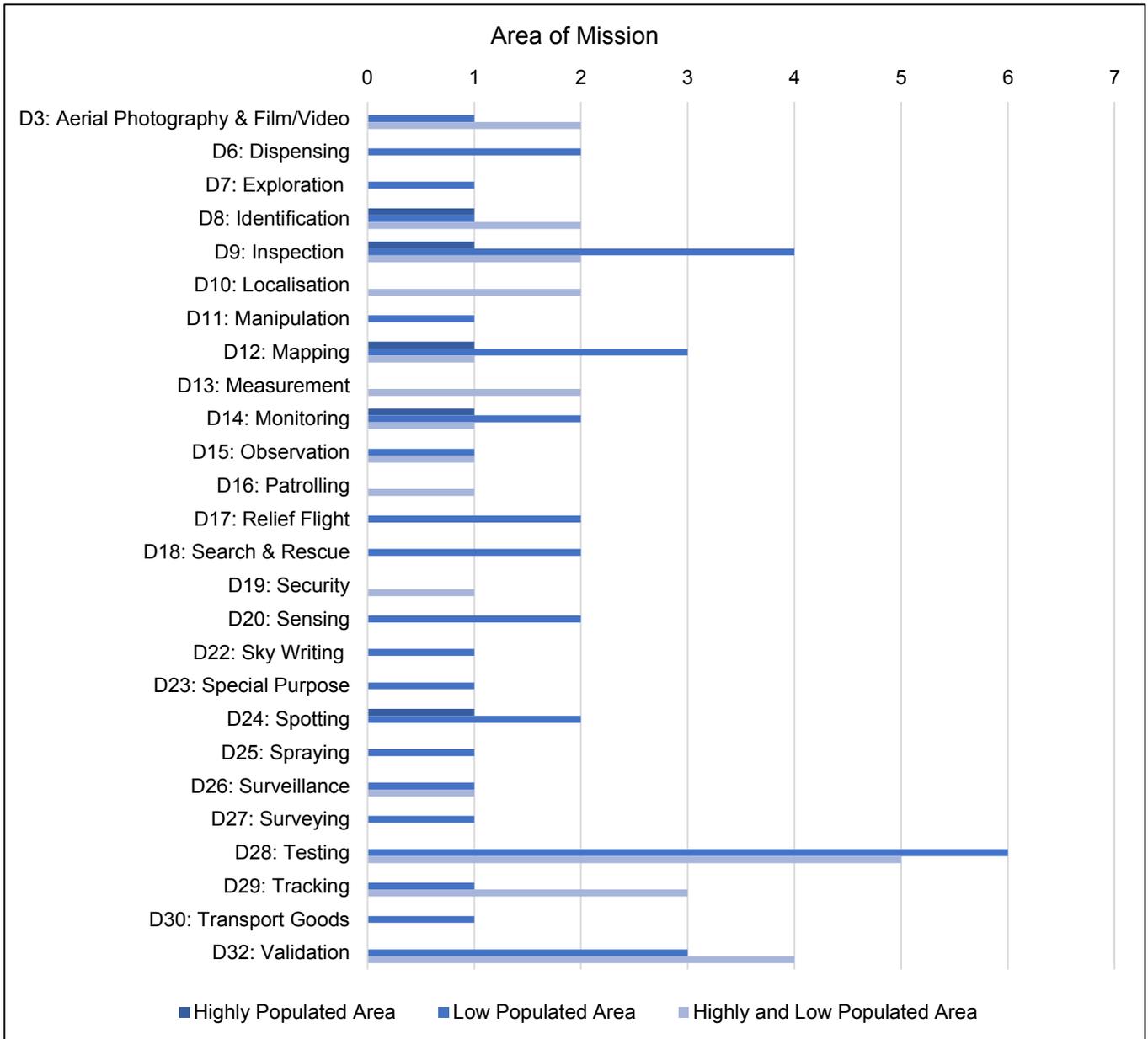
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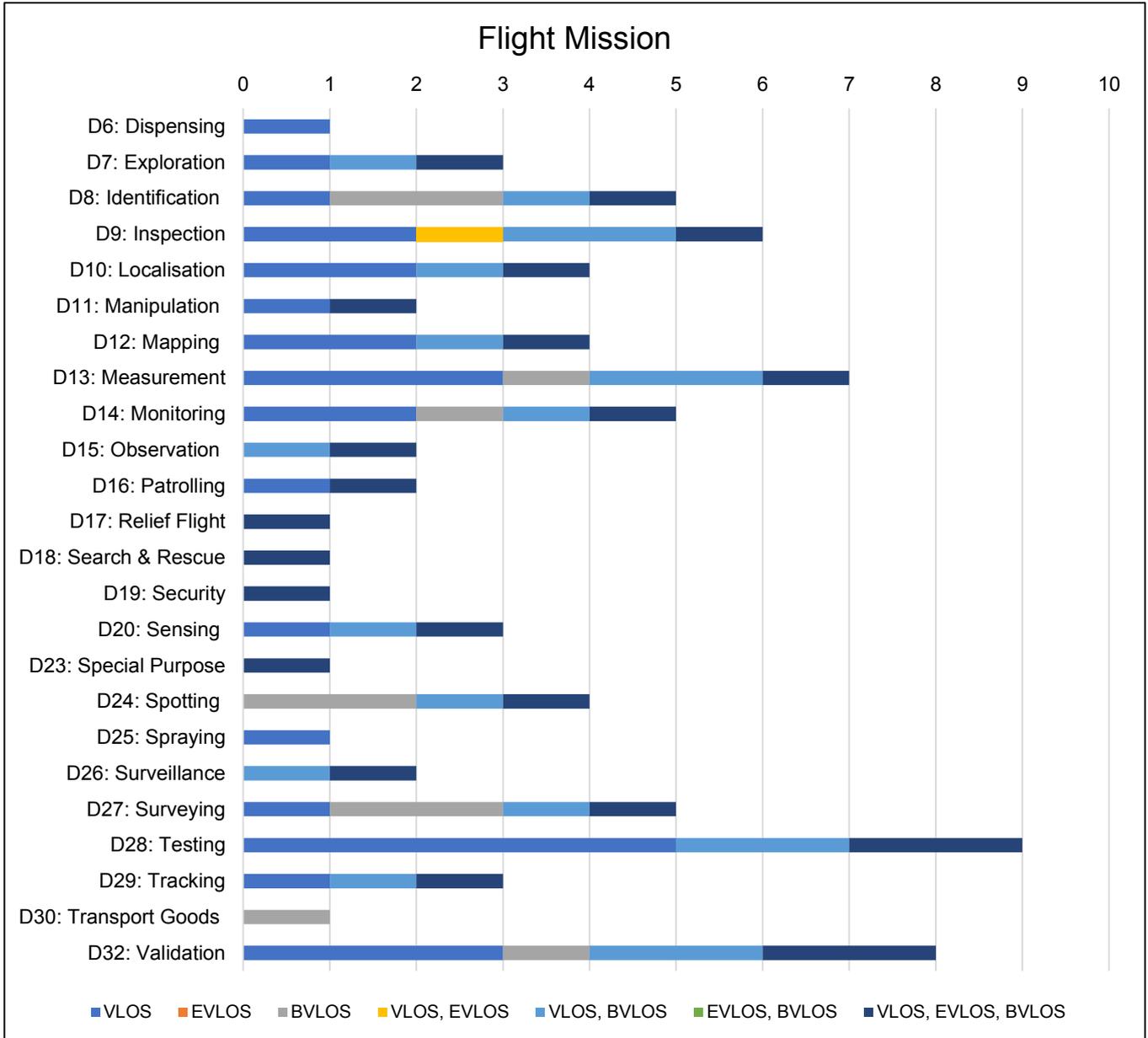
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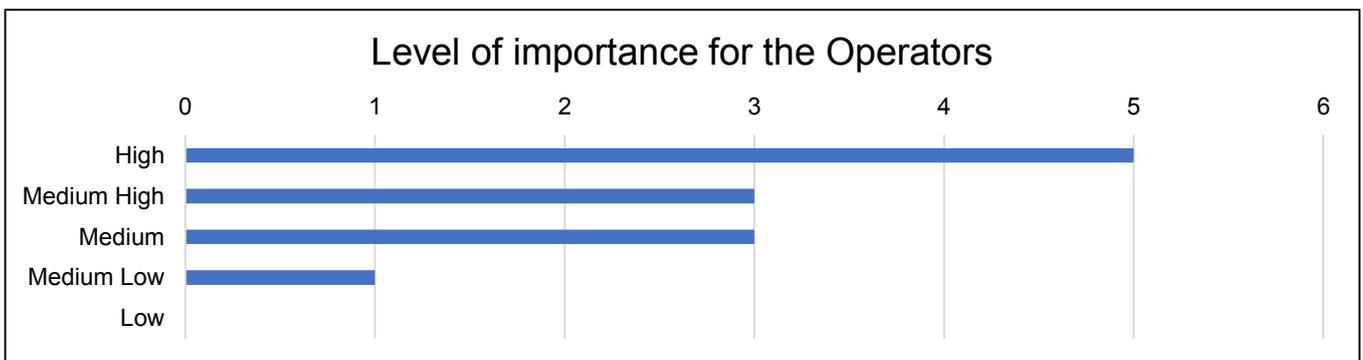
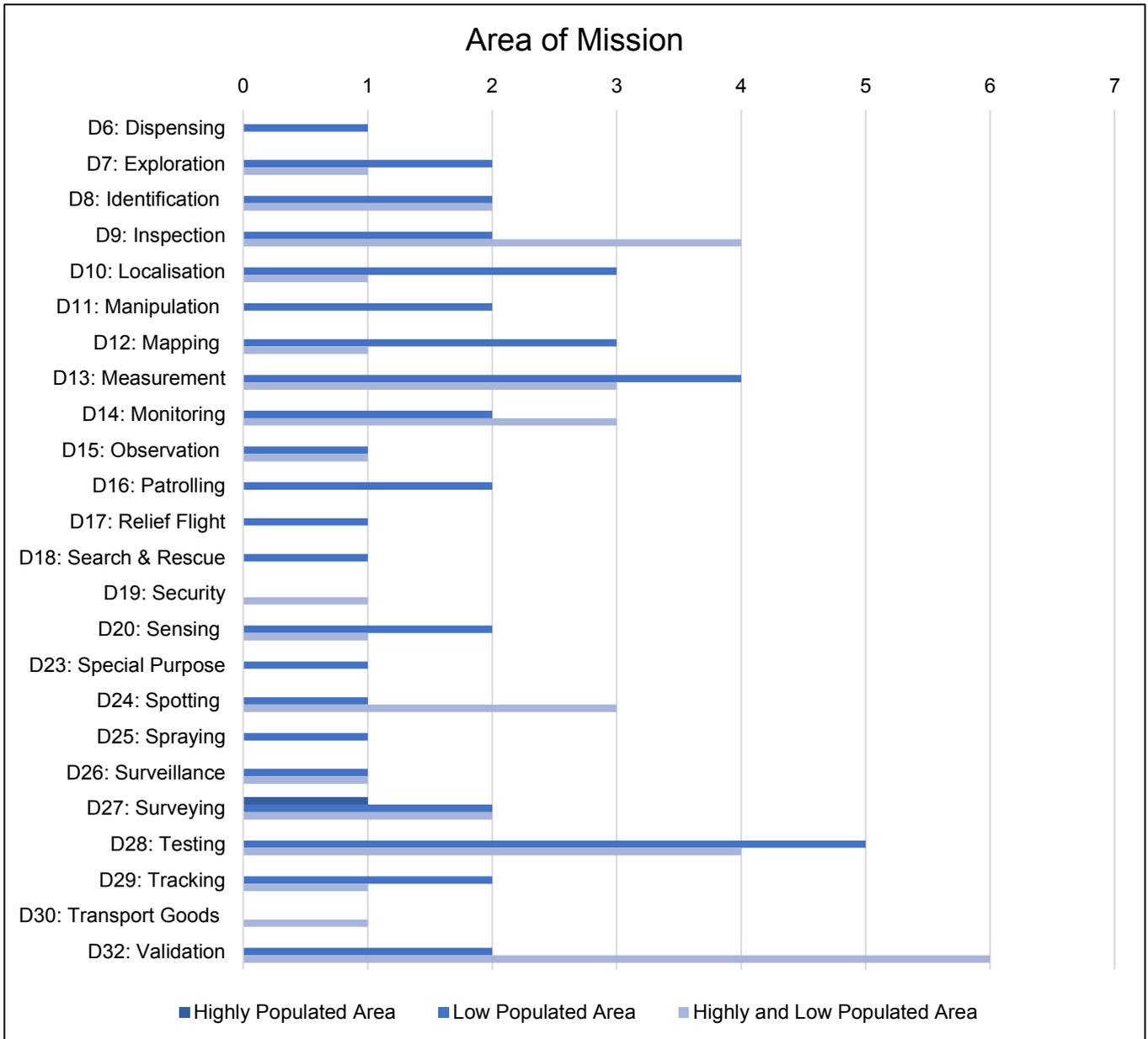
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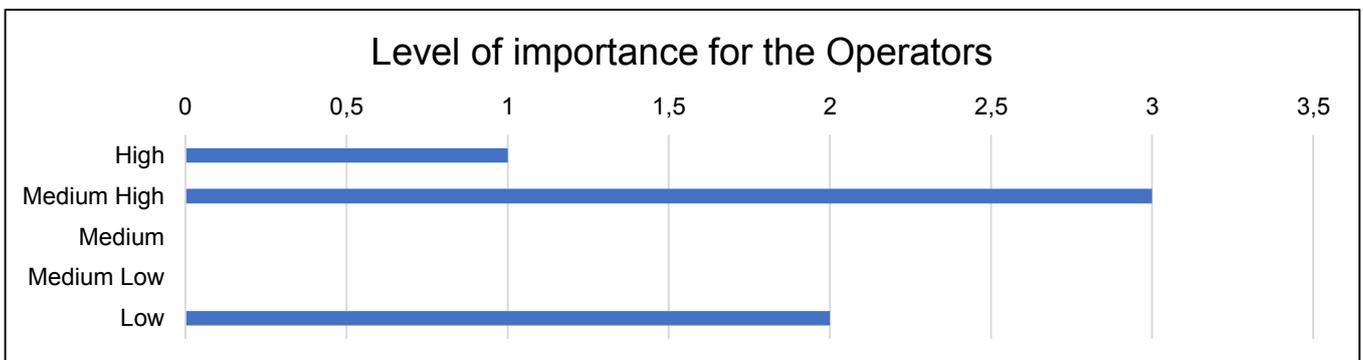
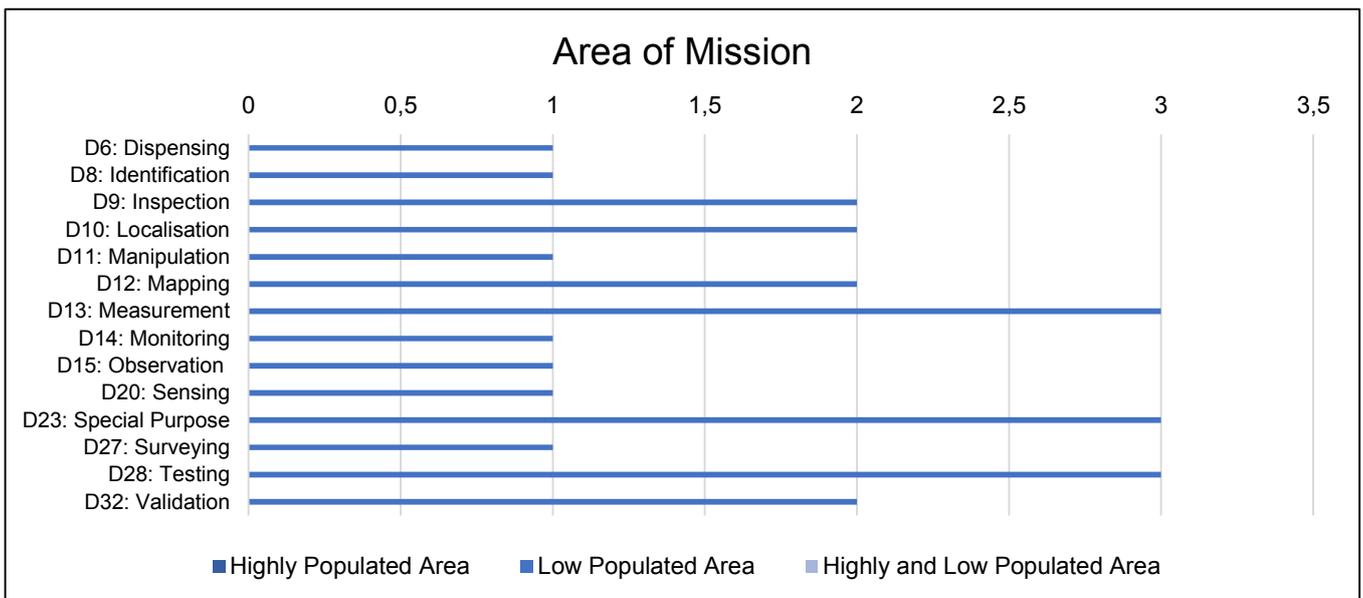
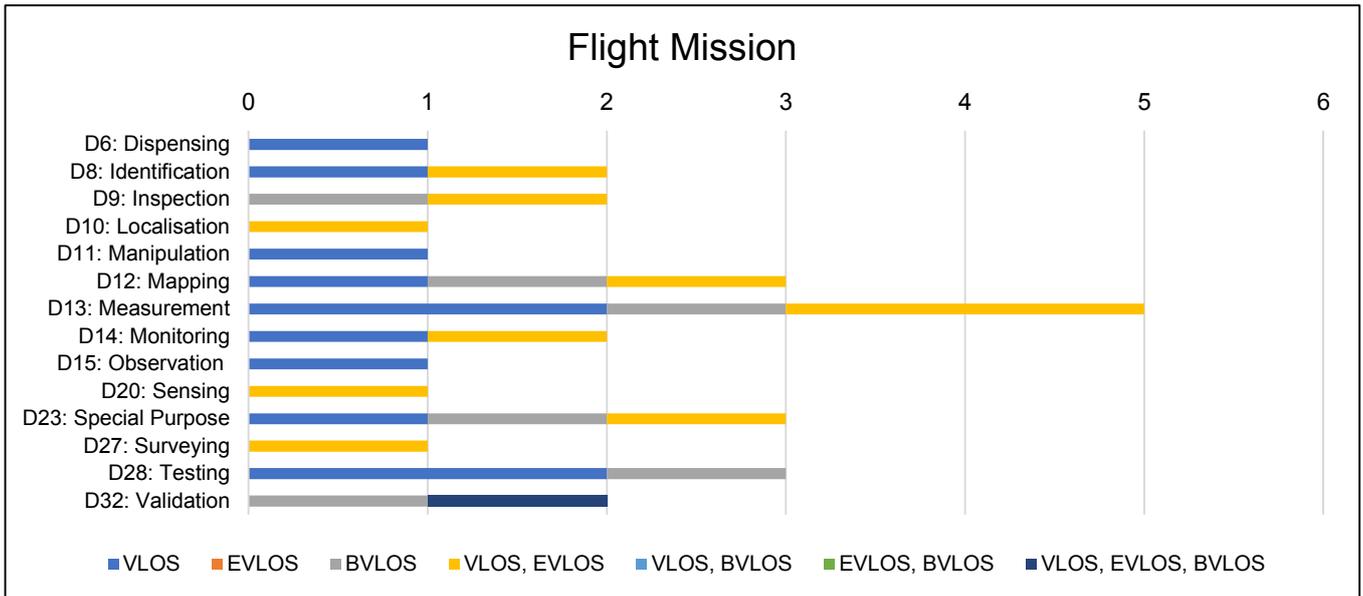
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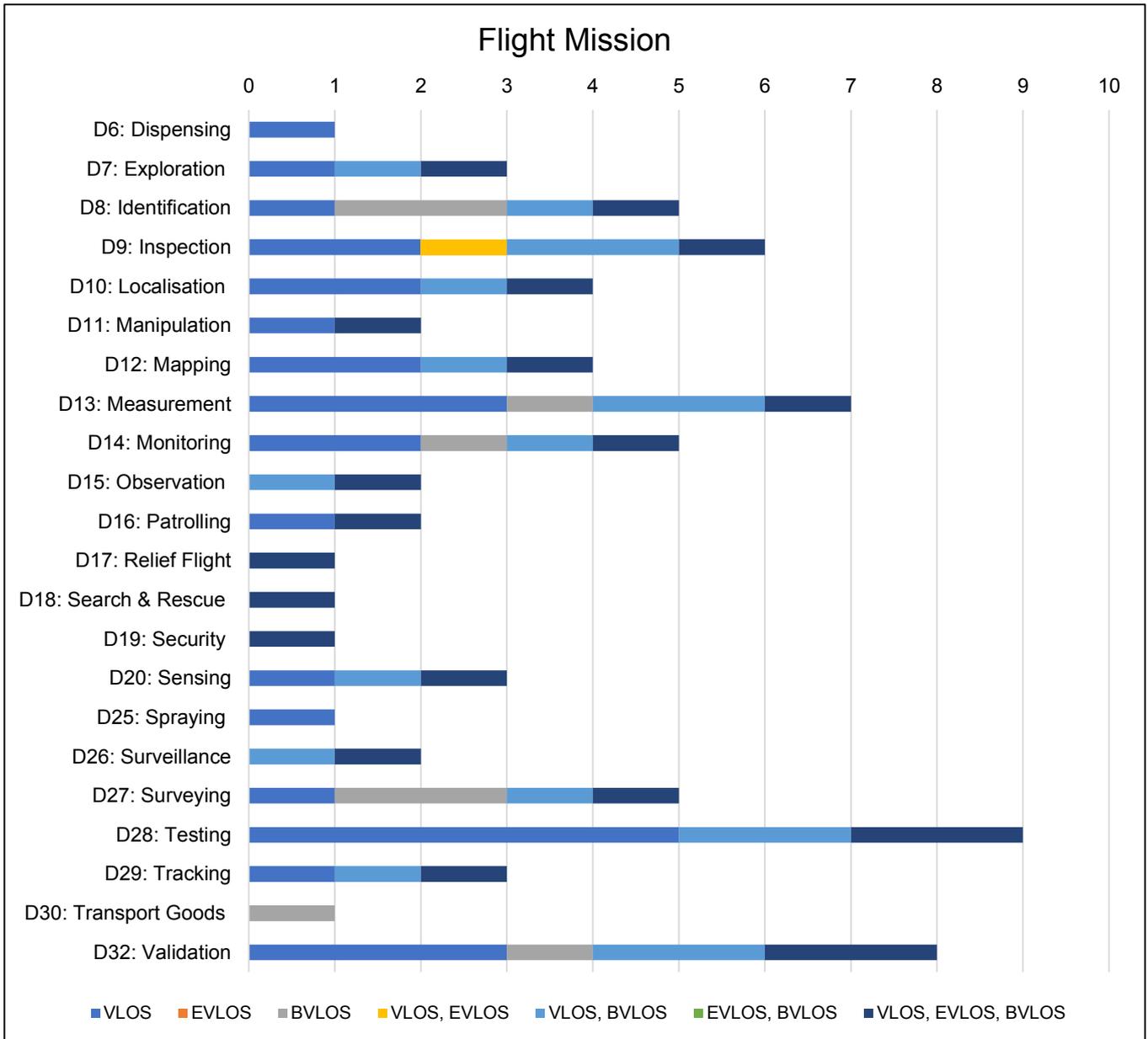
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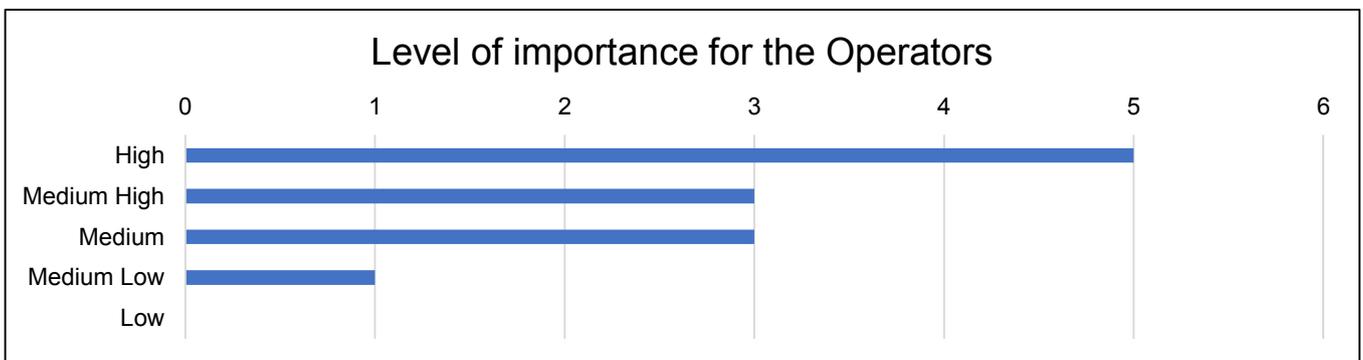
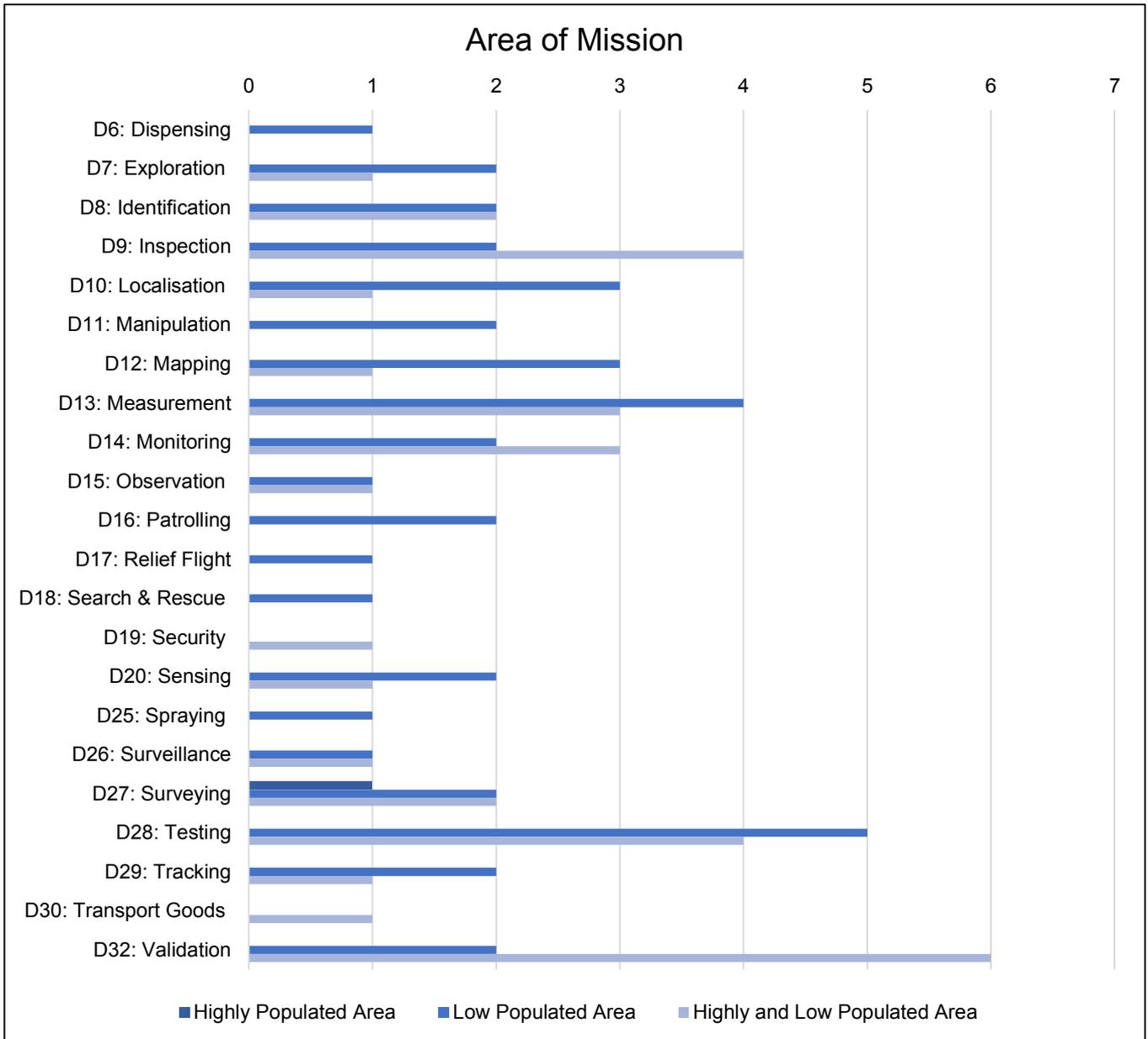
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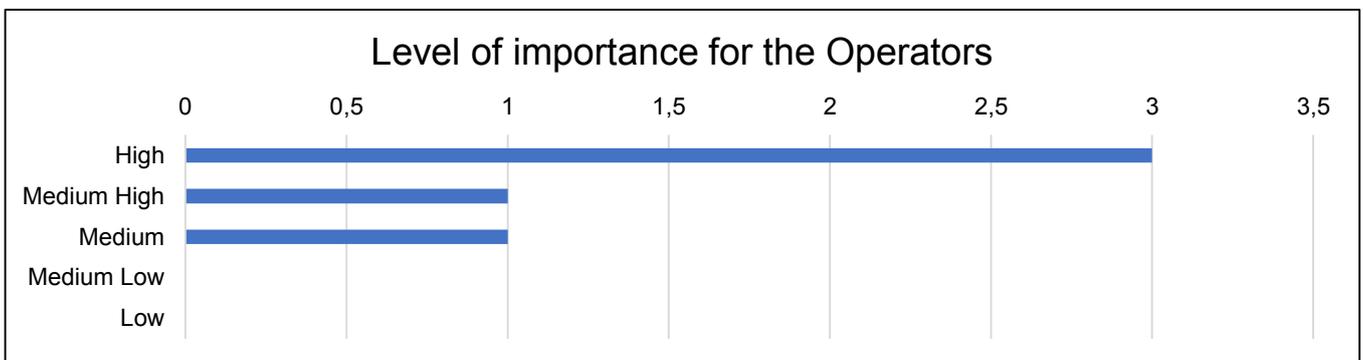
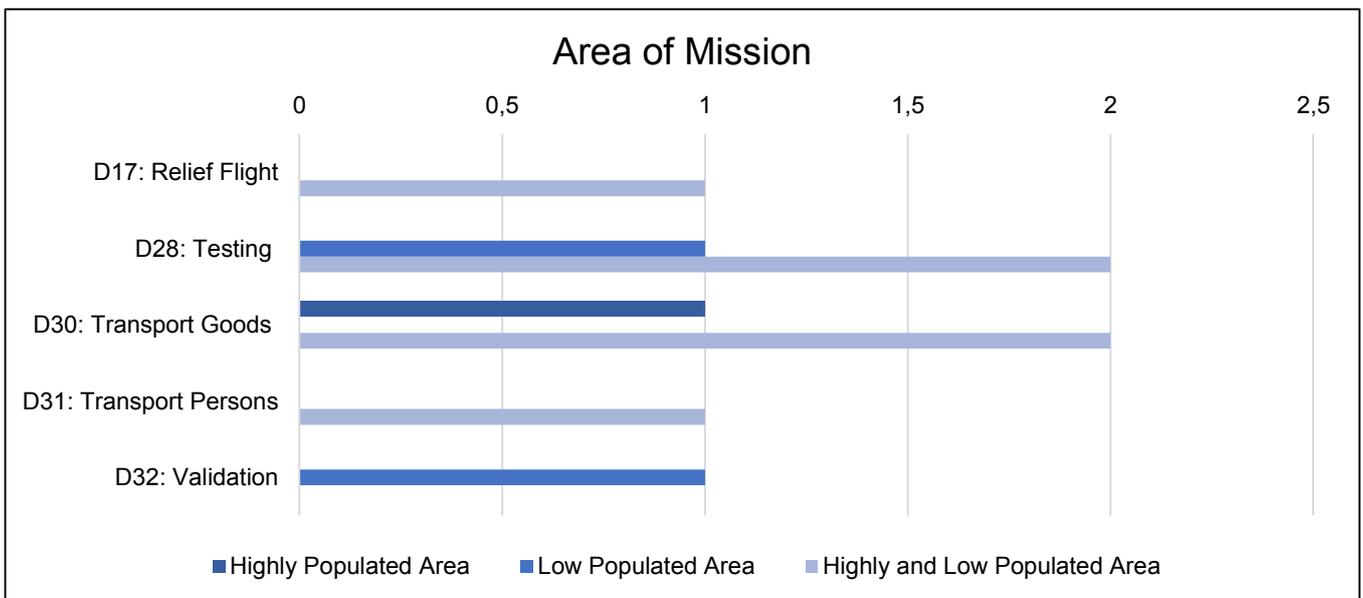
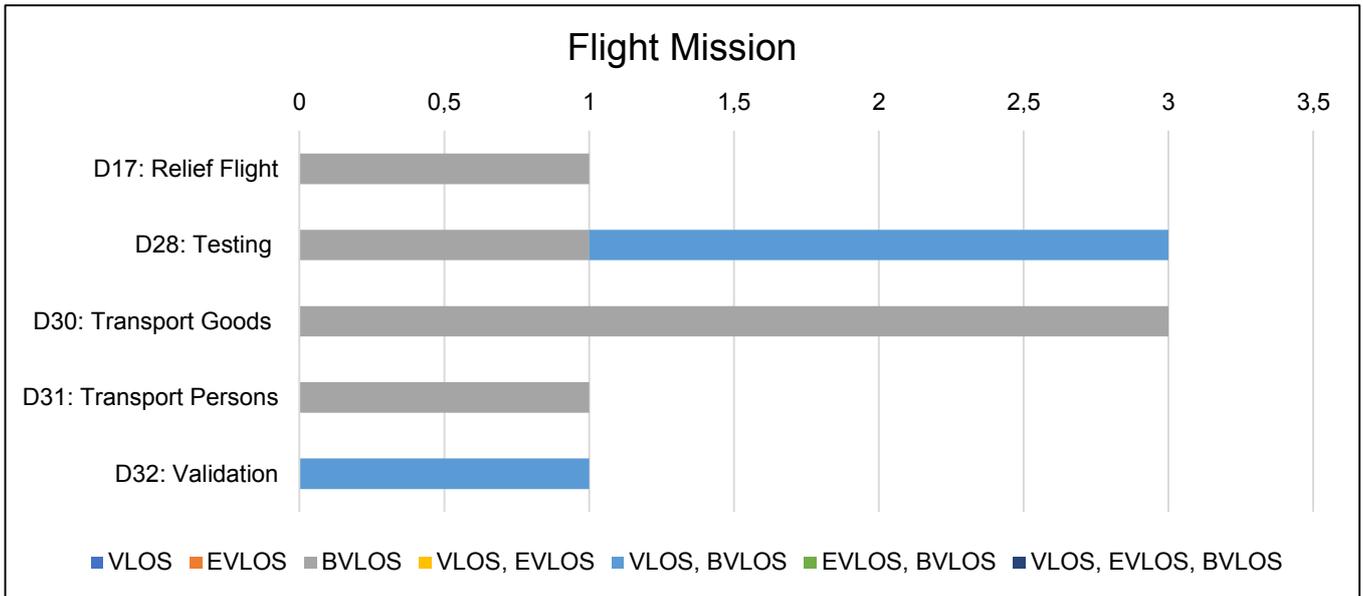
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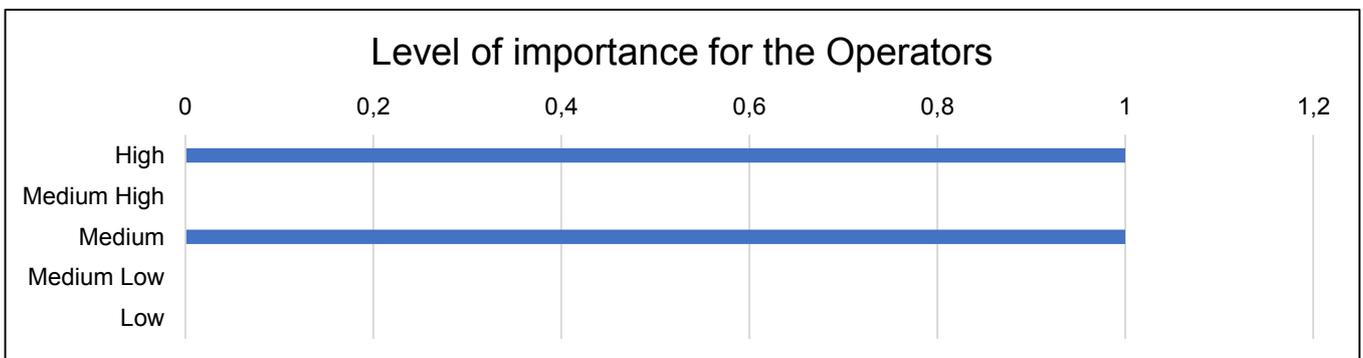
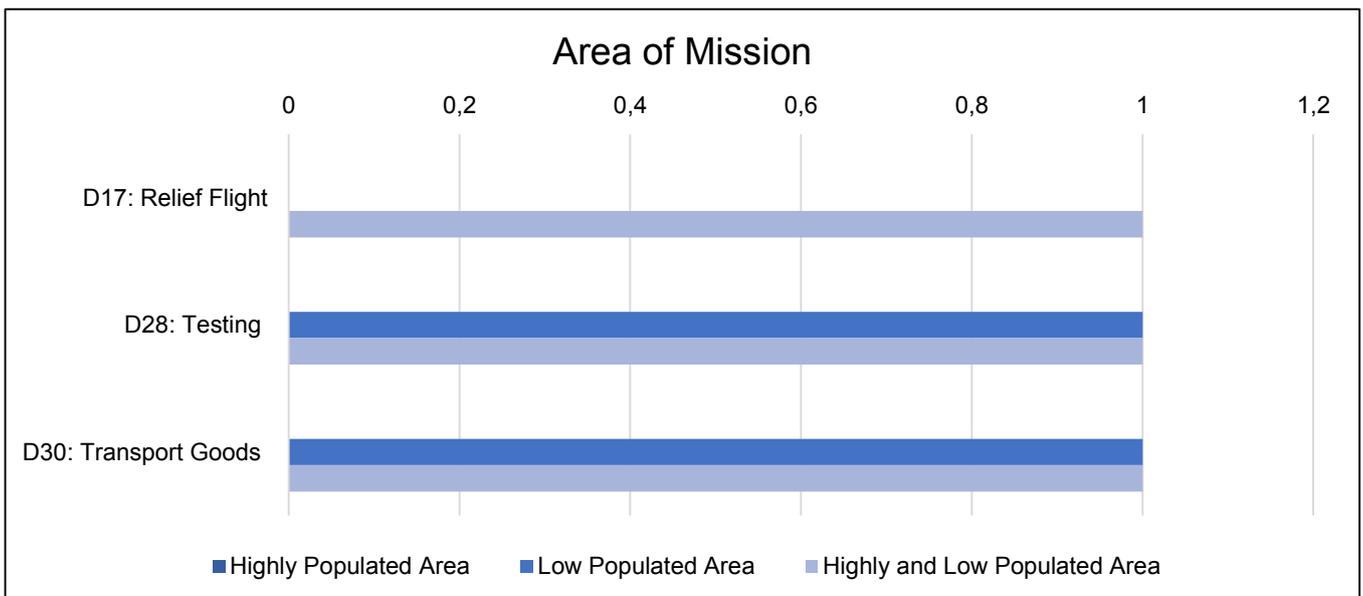
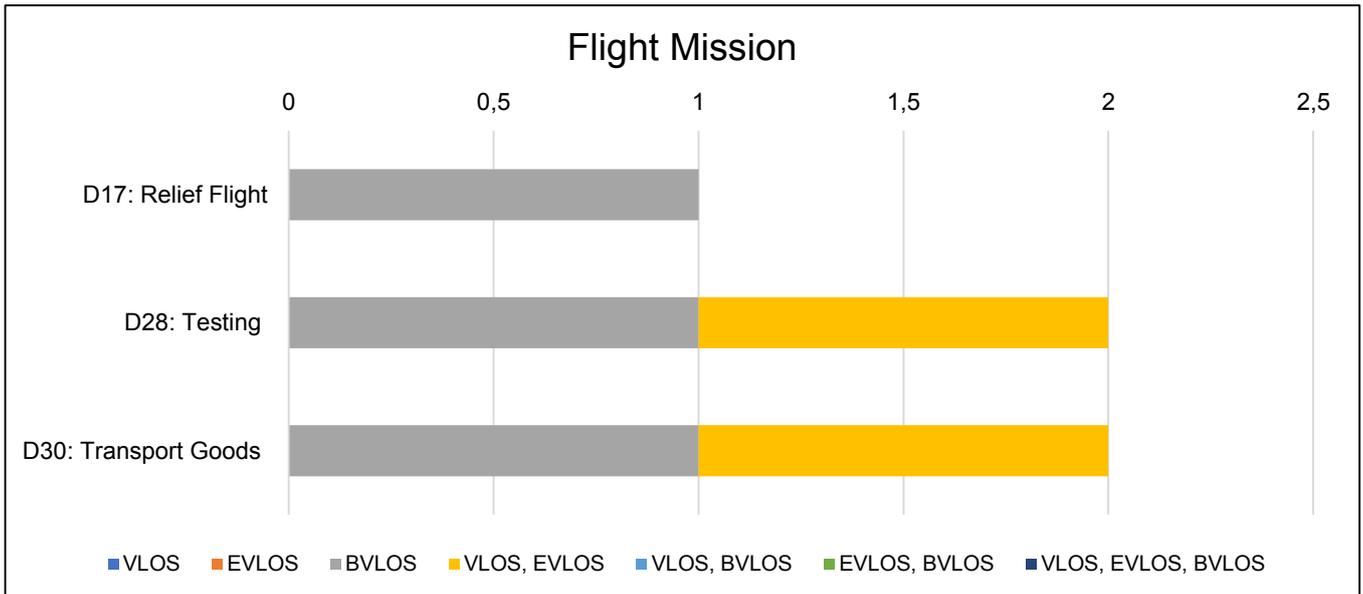
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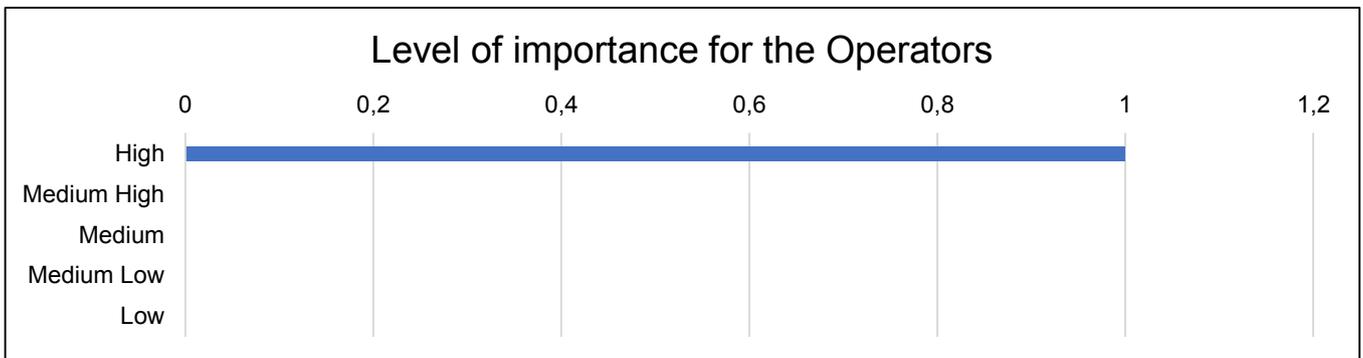
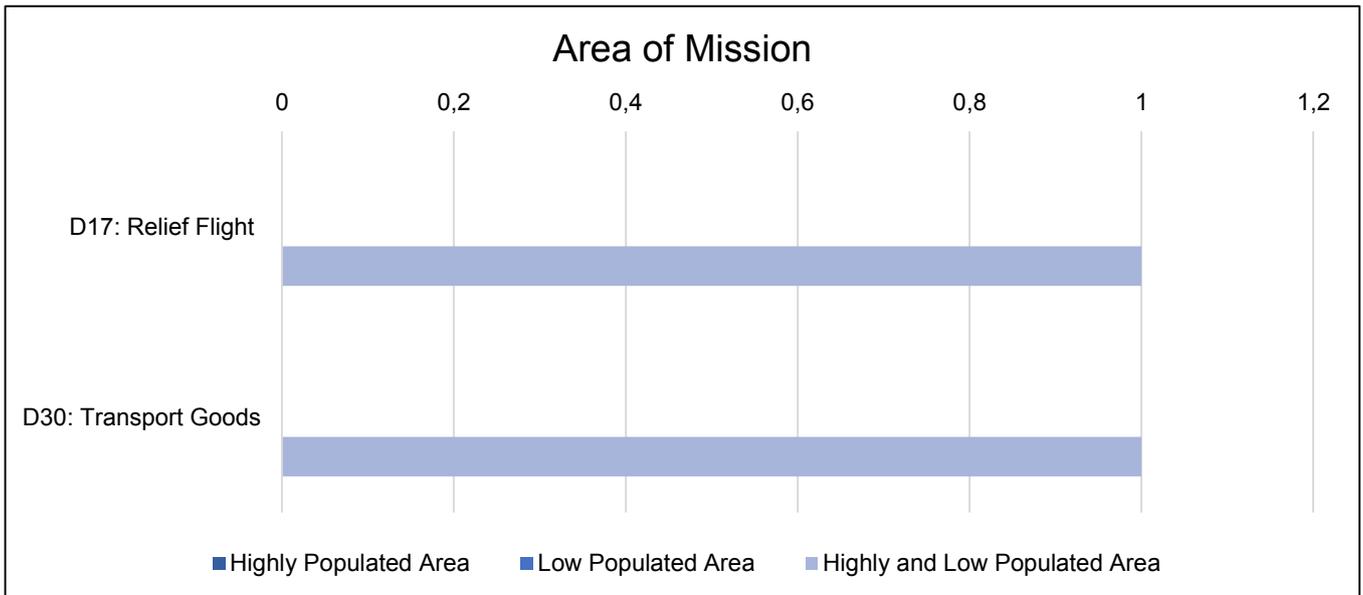
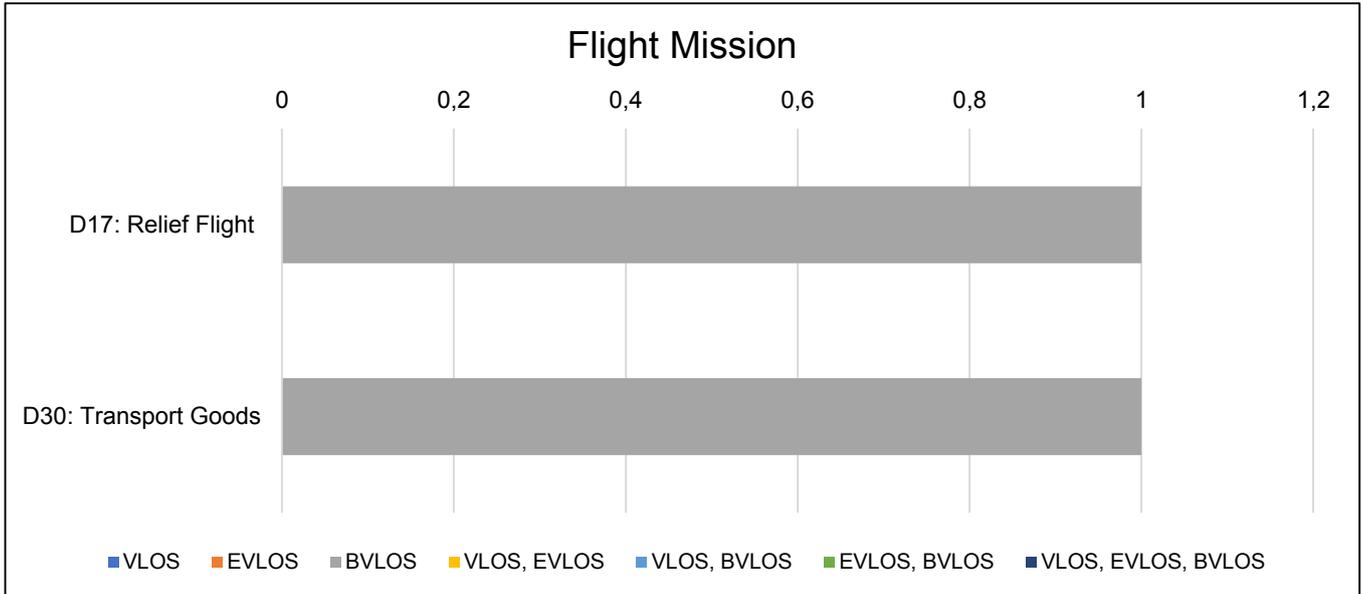
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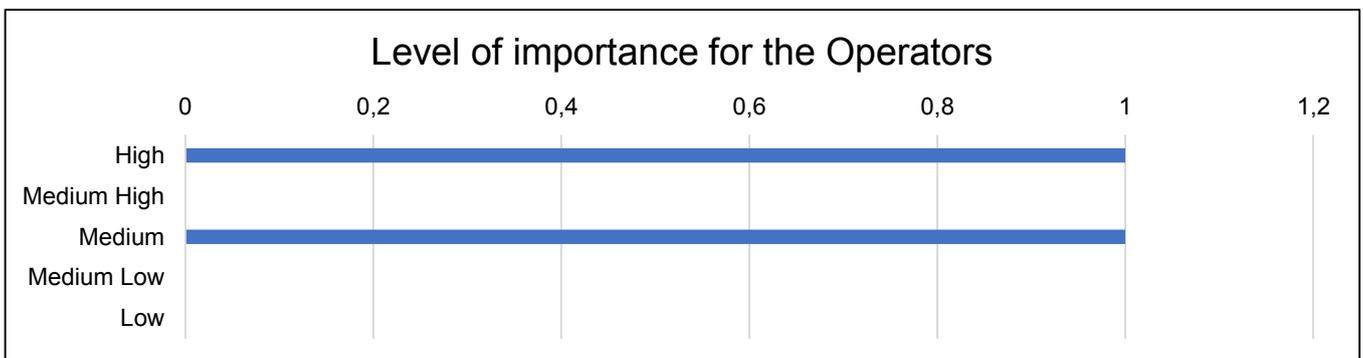
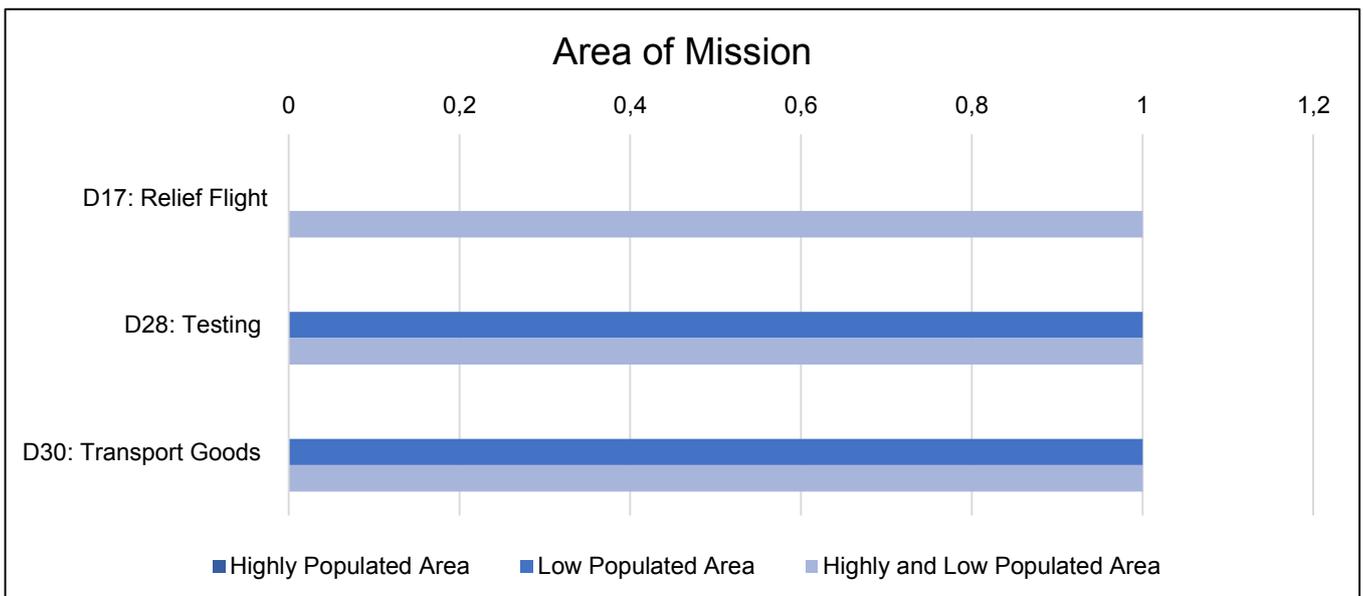
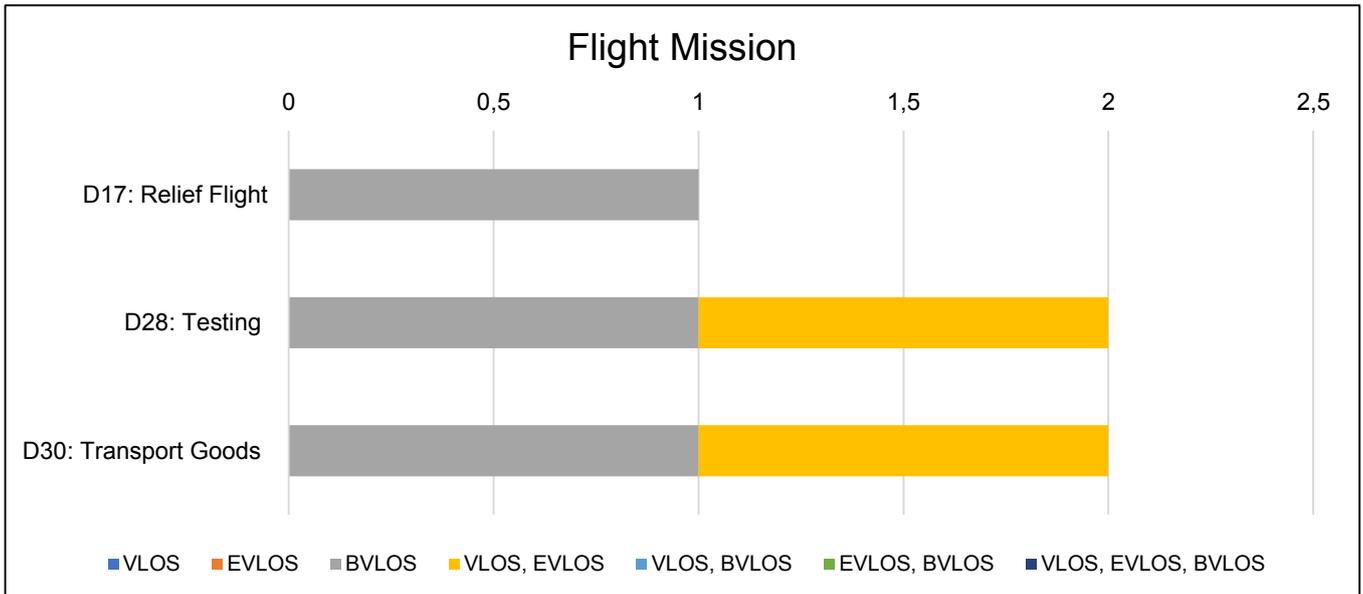
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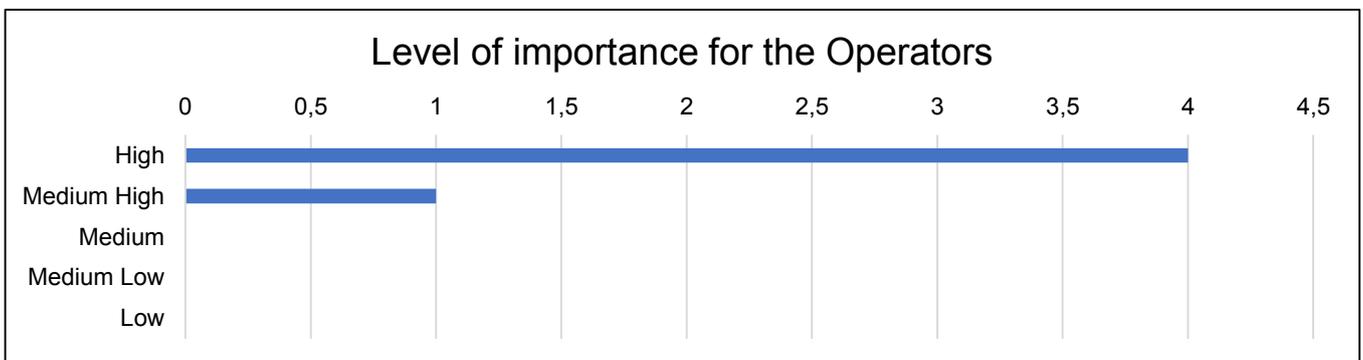
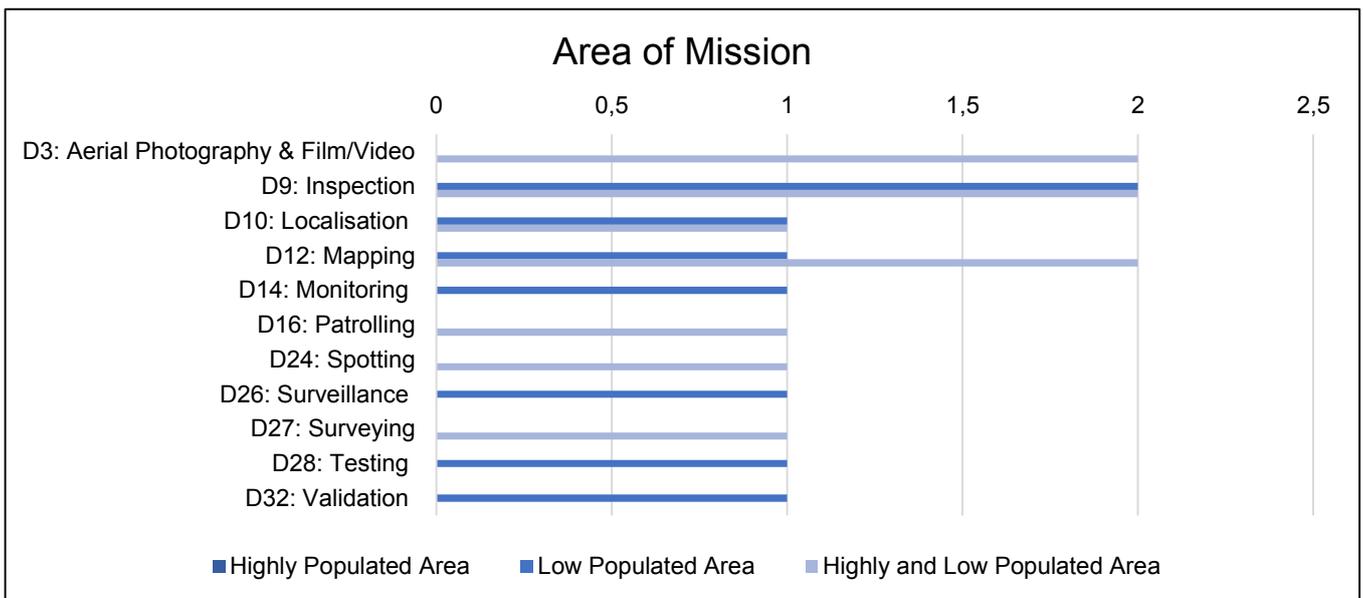
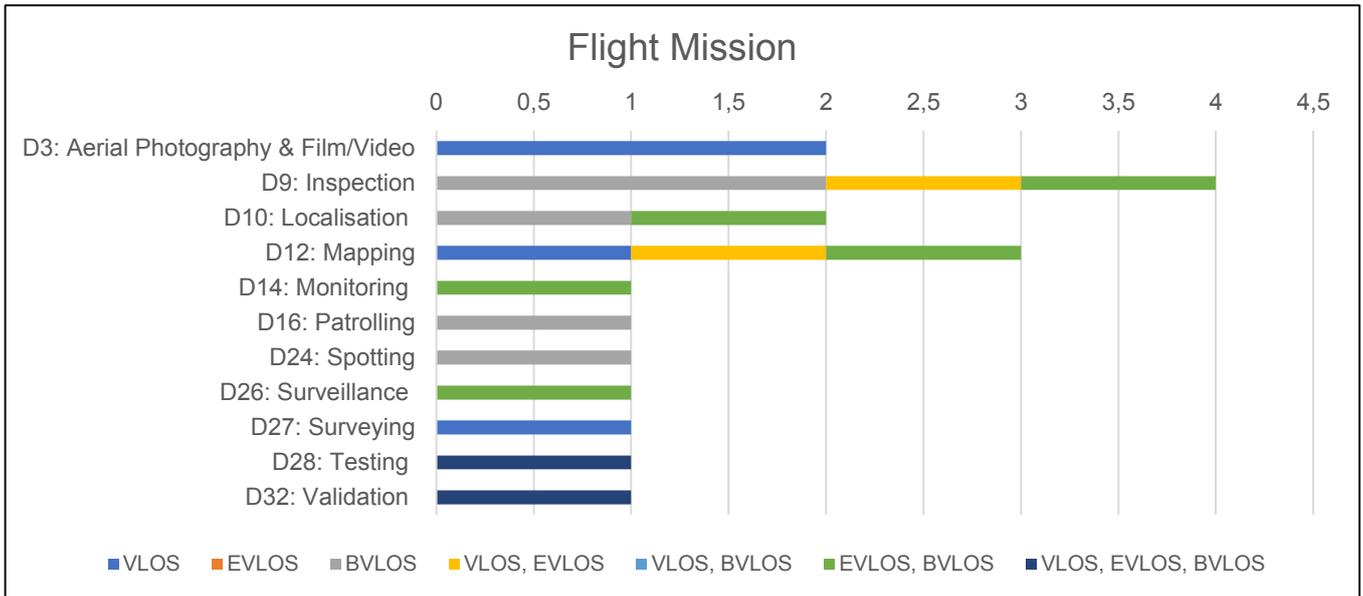
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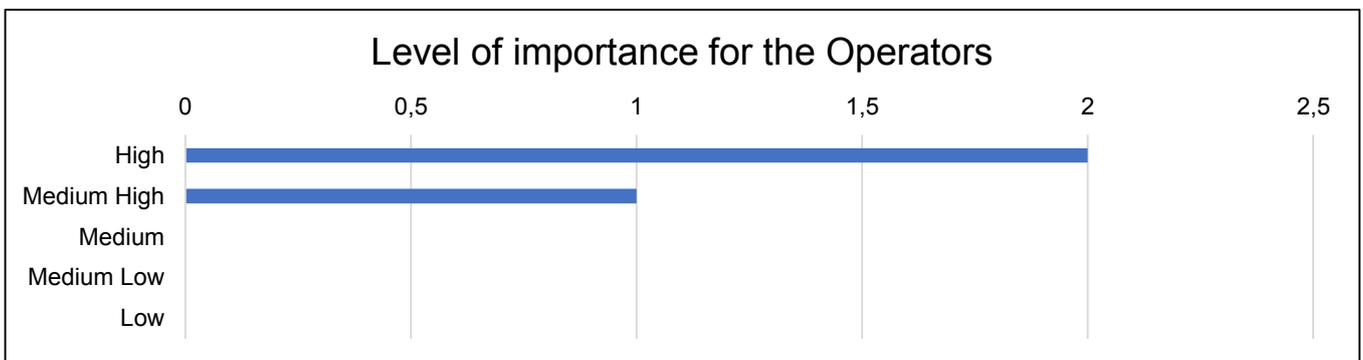
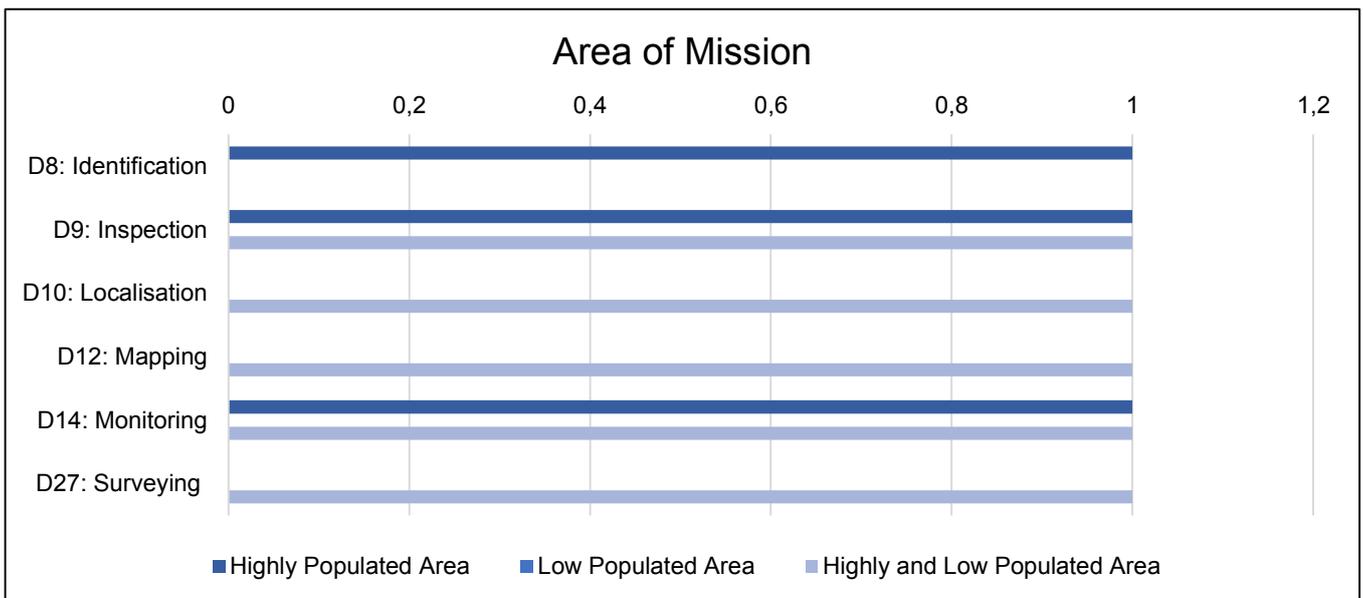
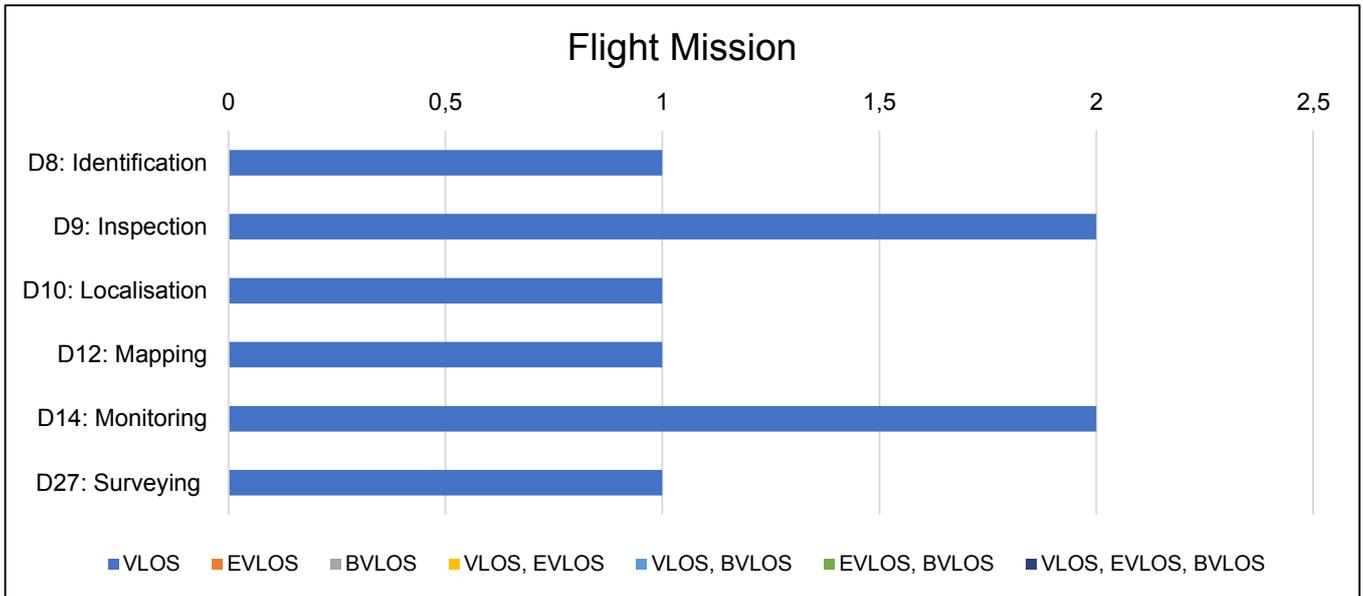
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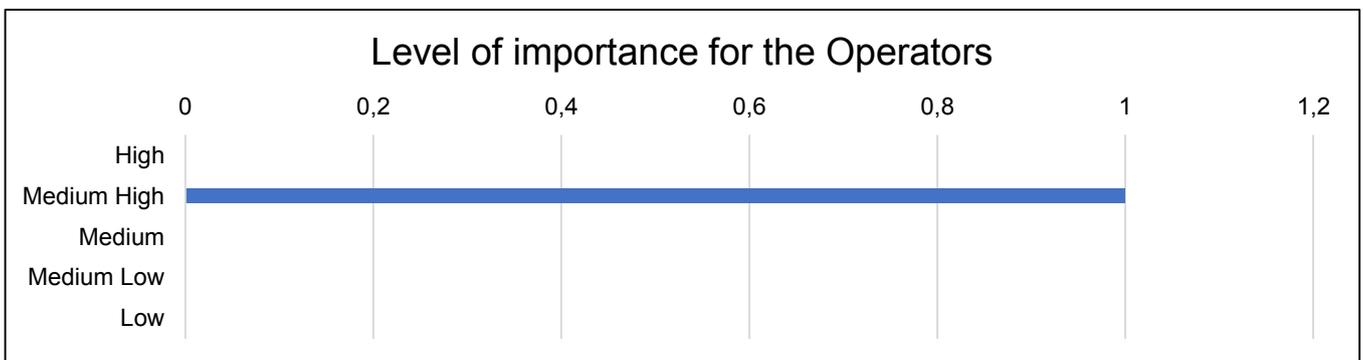
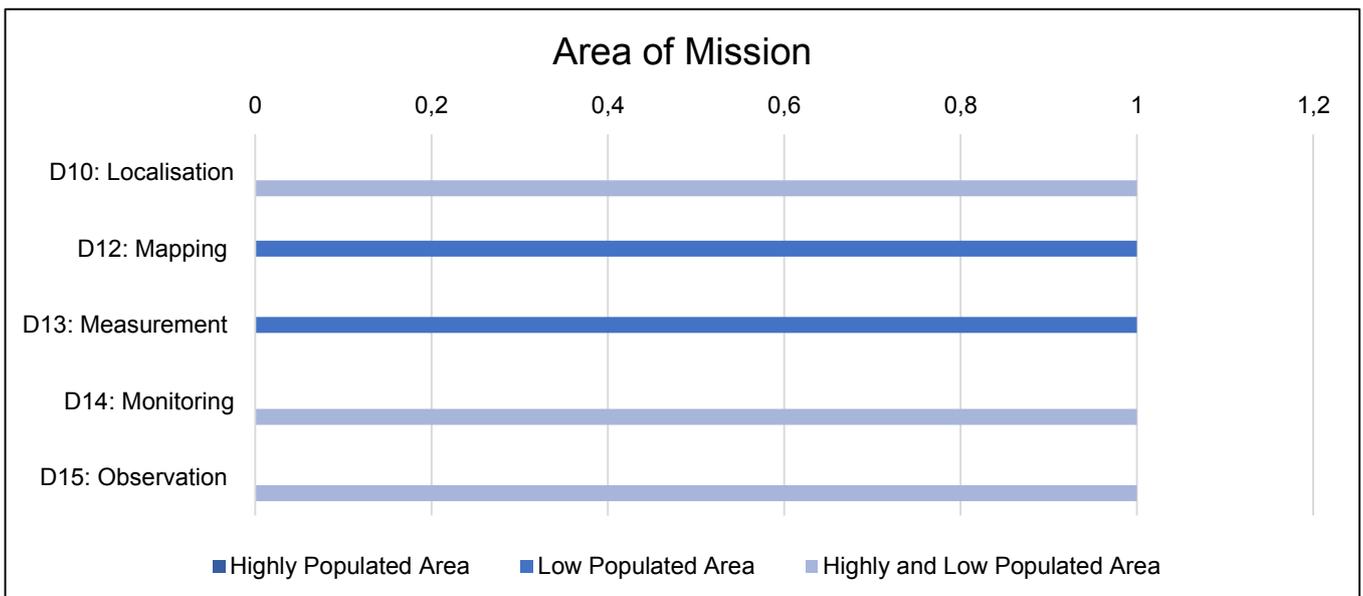
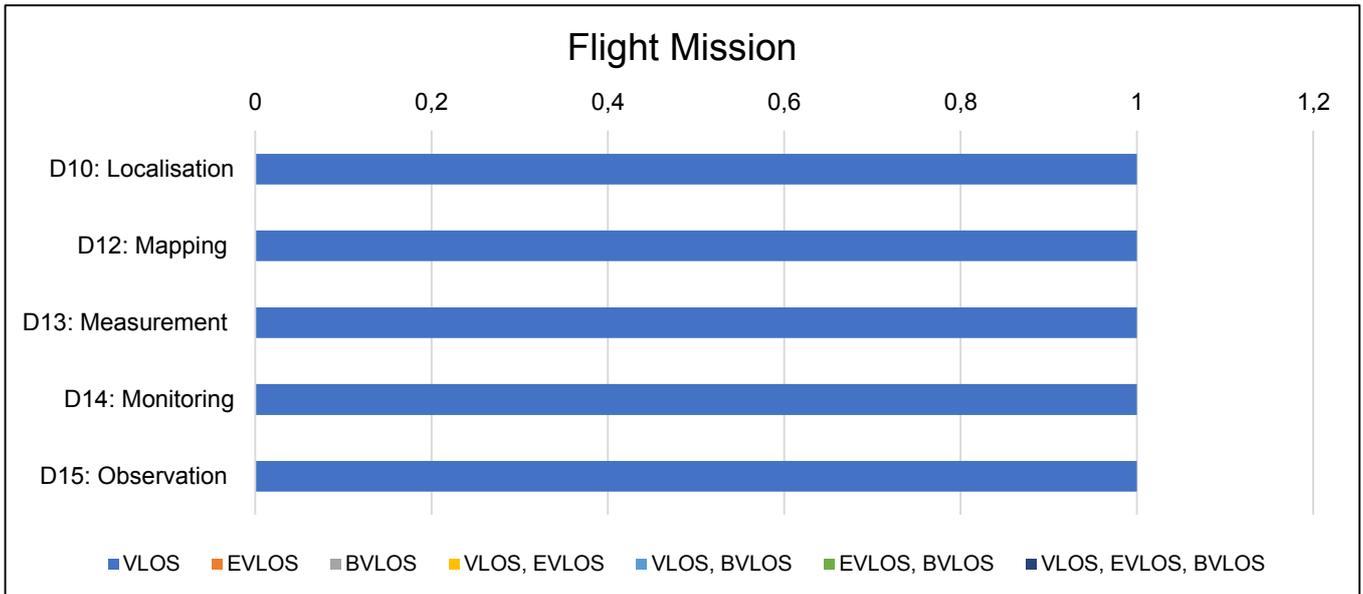
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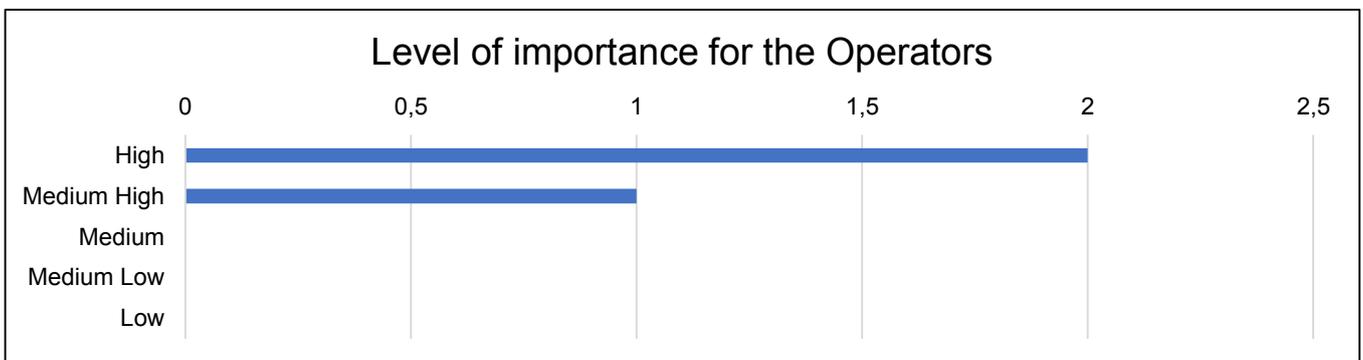
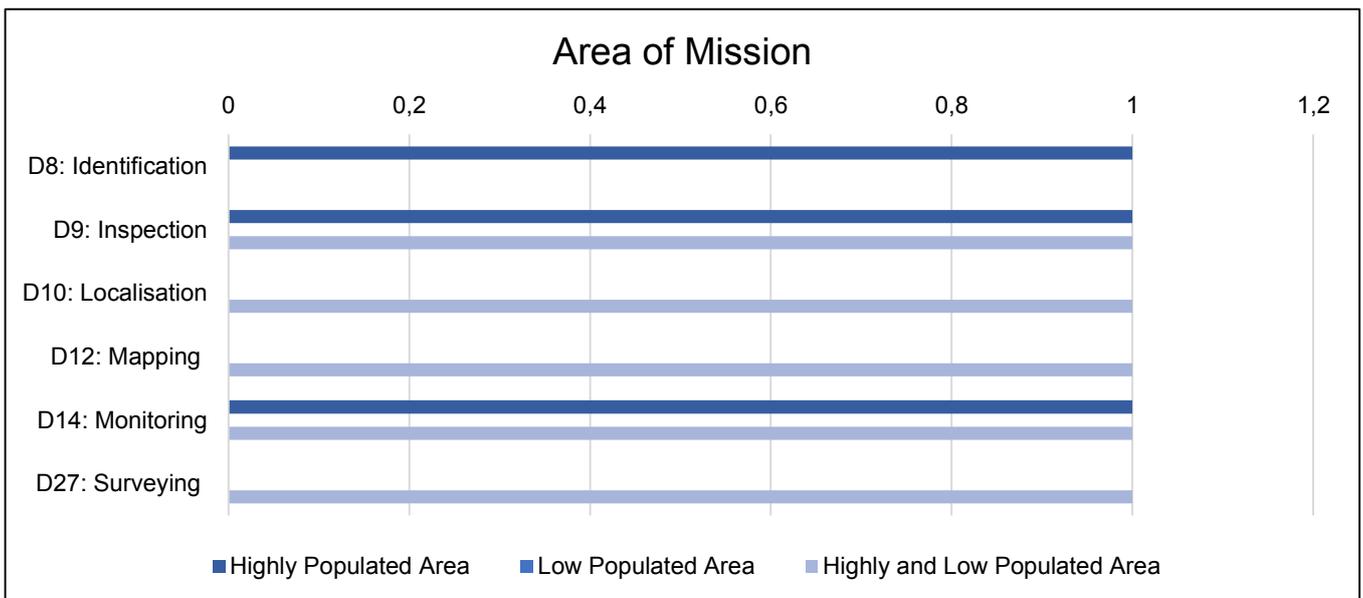
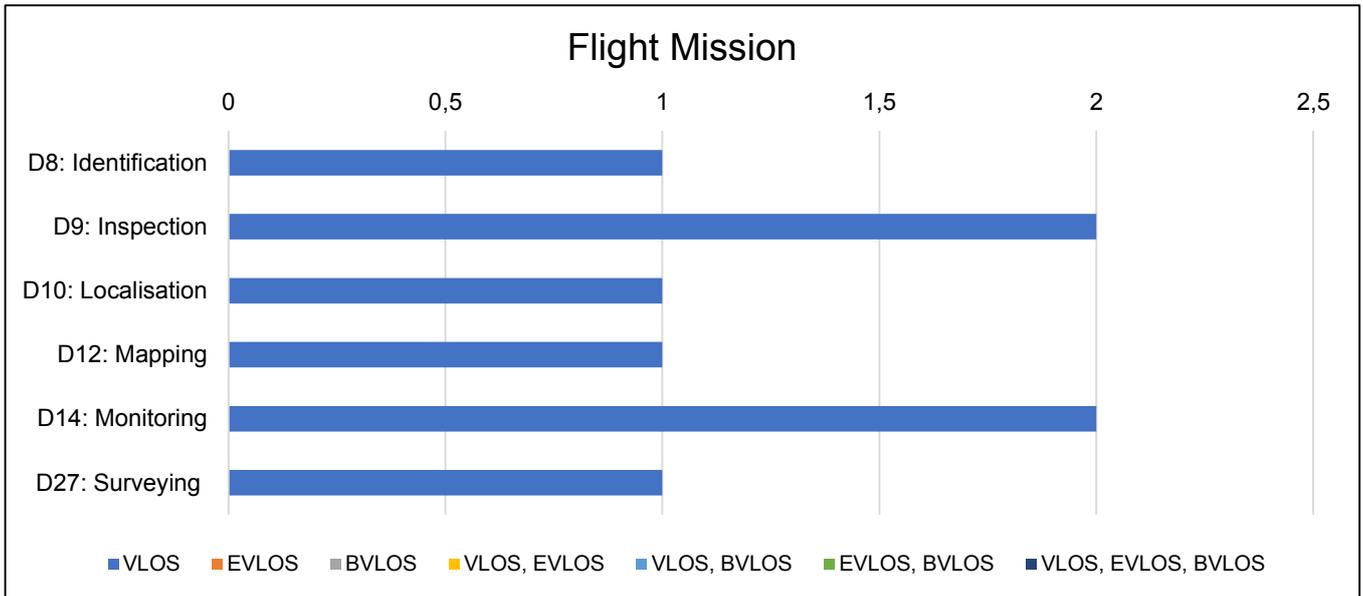
## Survey on Drone Operations & Safety Risk Analysis Methods



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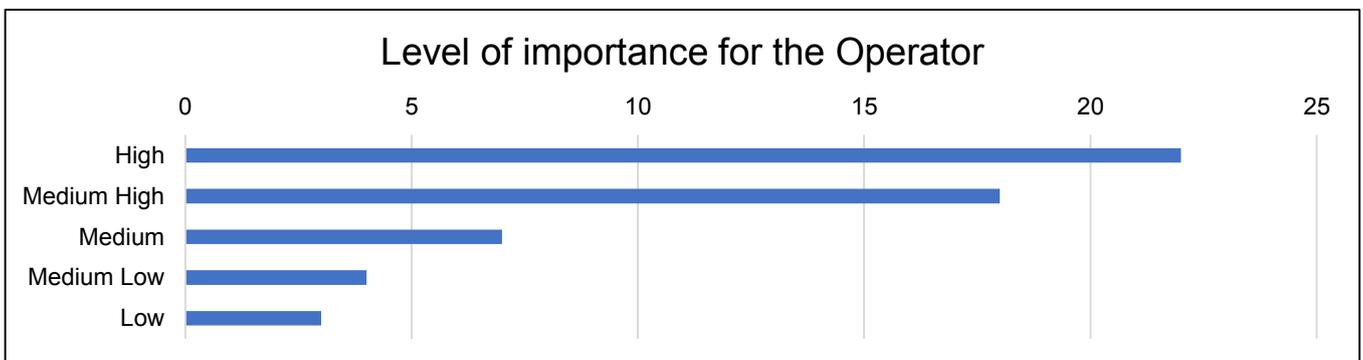
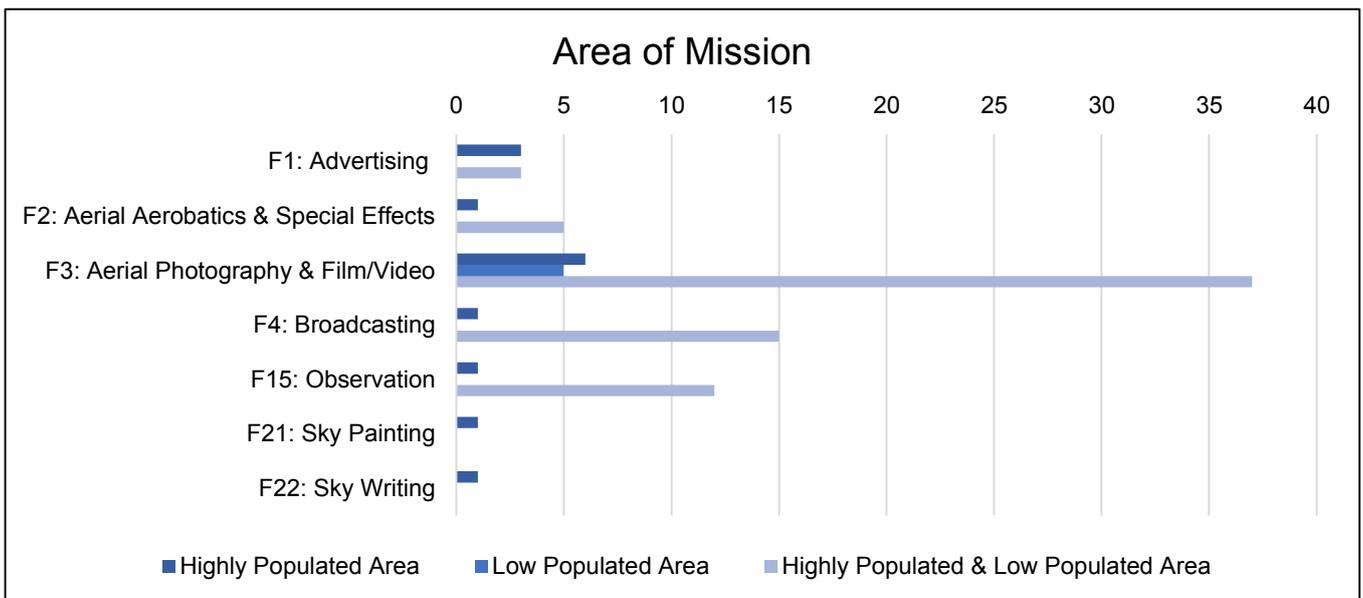
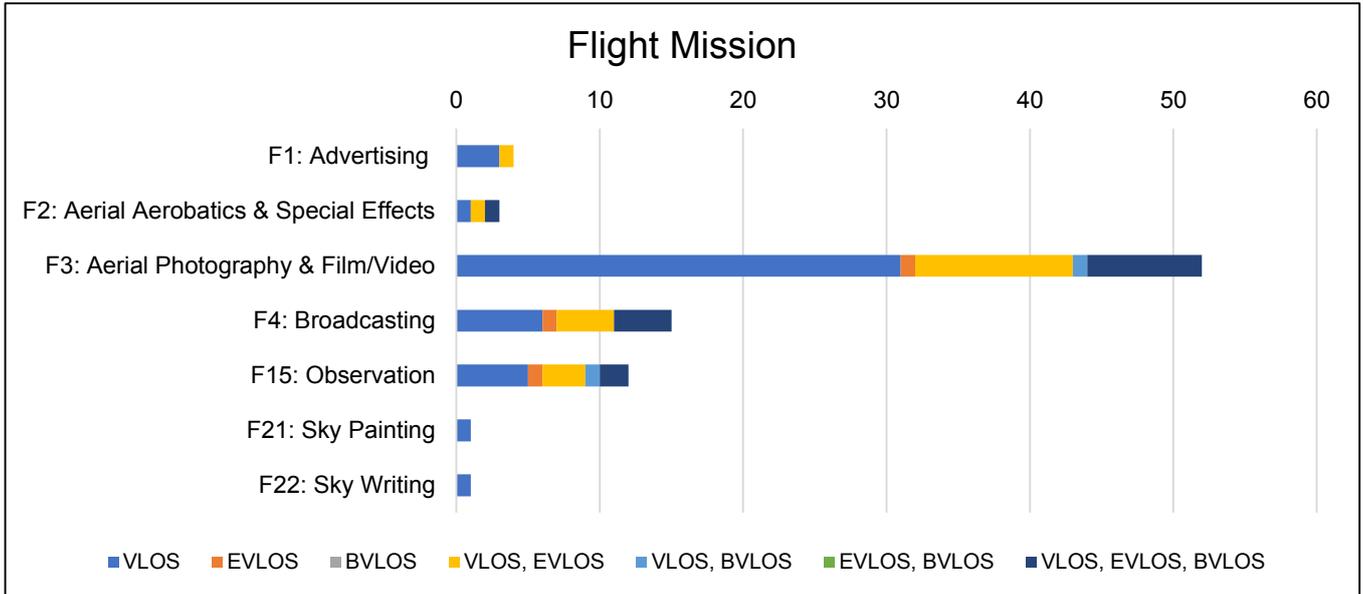
**ANNEX**

**PART 1 – UAS OPS**

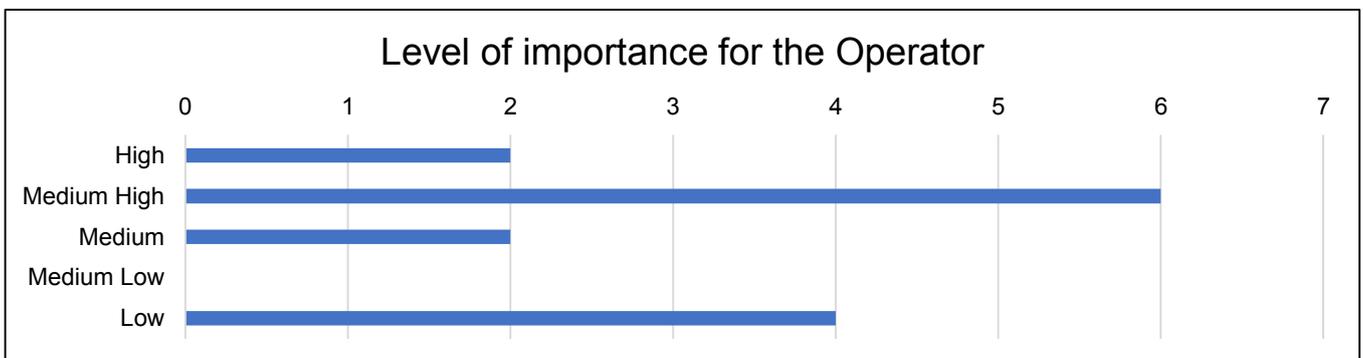
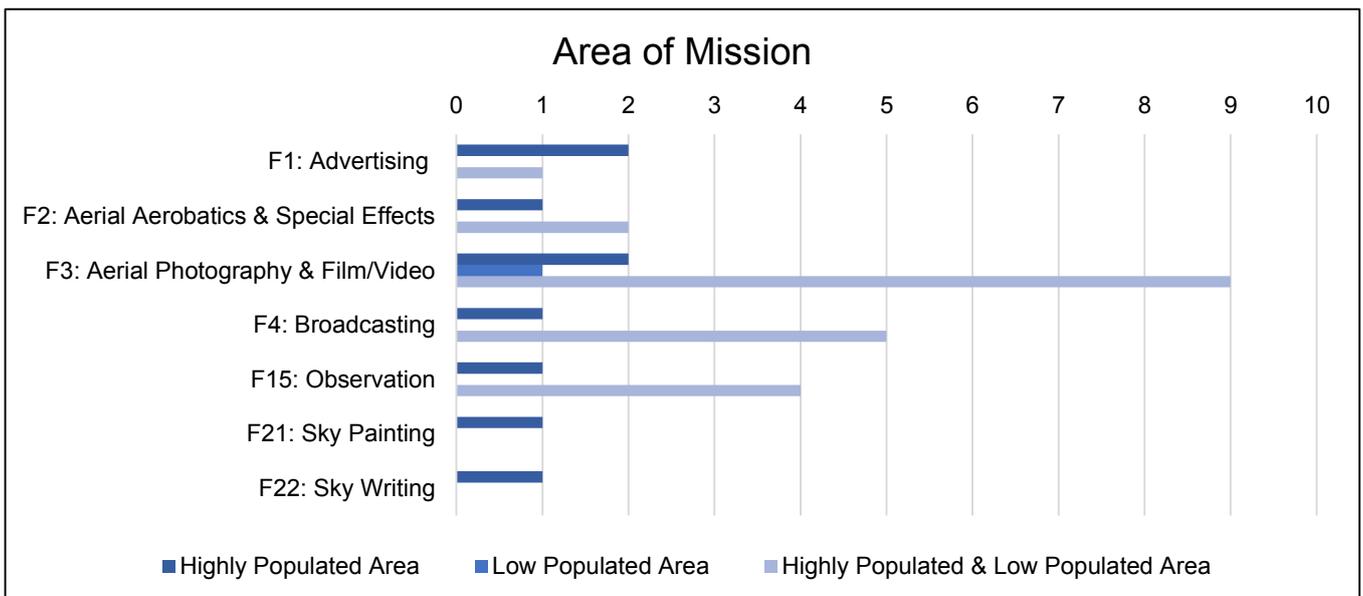
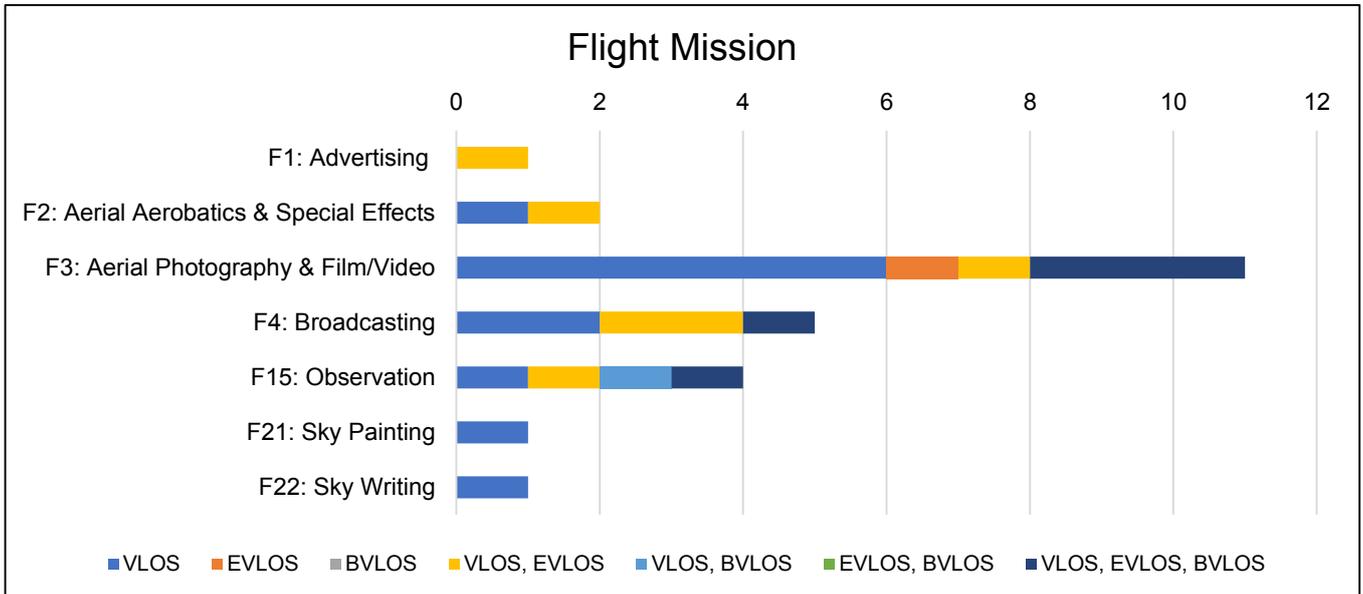
**SECTION 2**

**NEAR FUTURE (1-2 YEARS)**

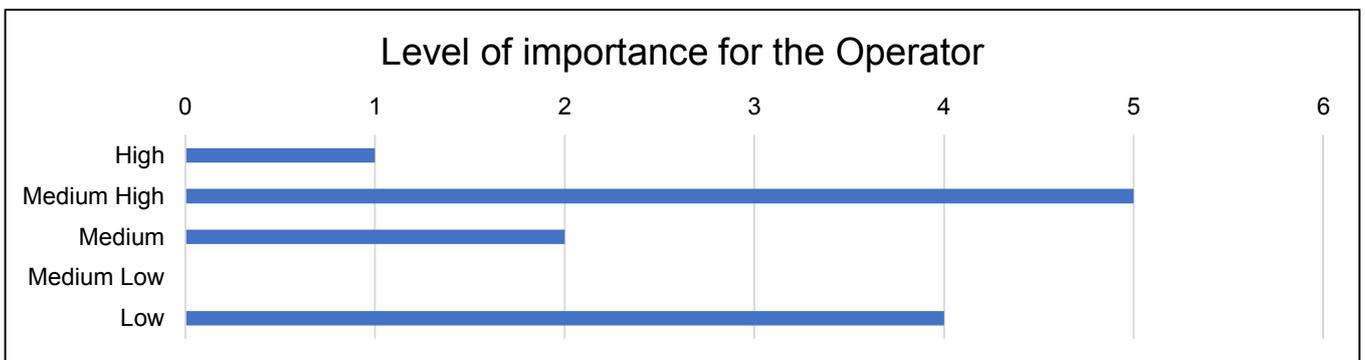
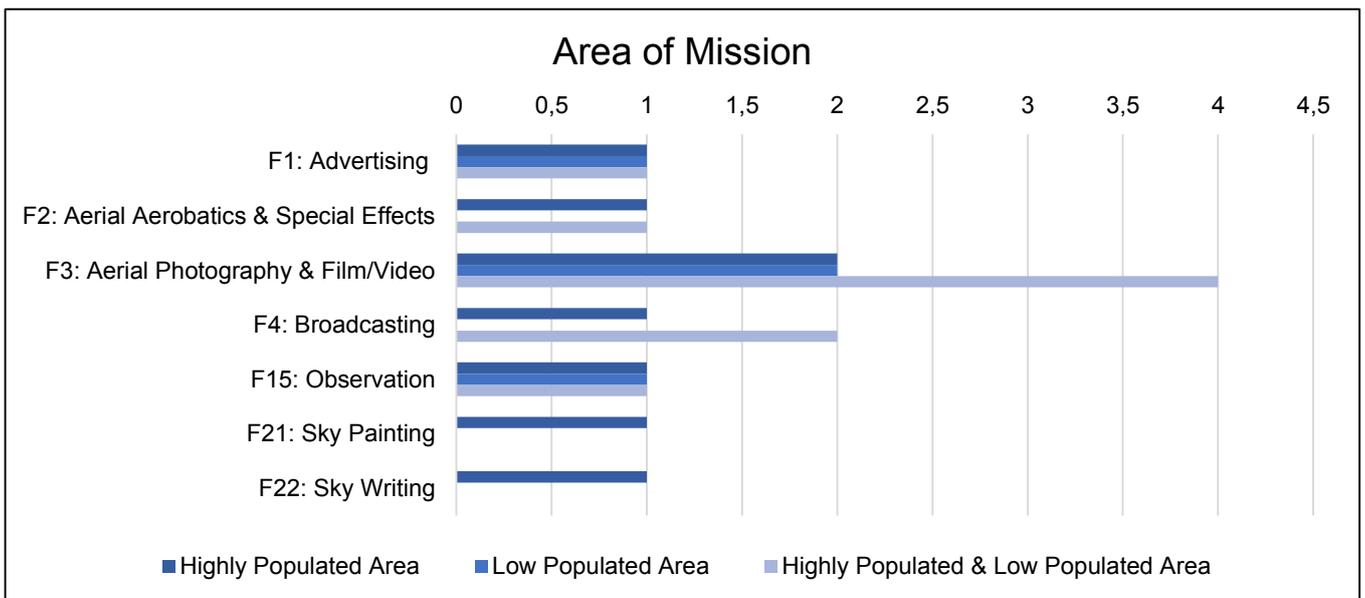
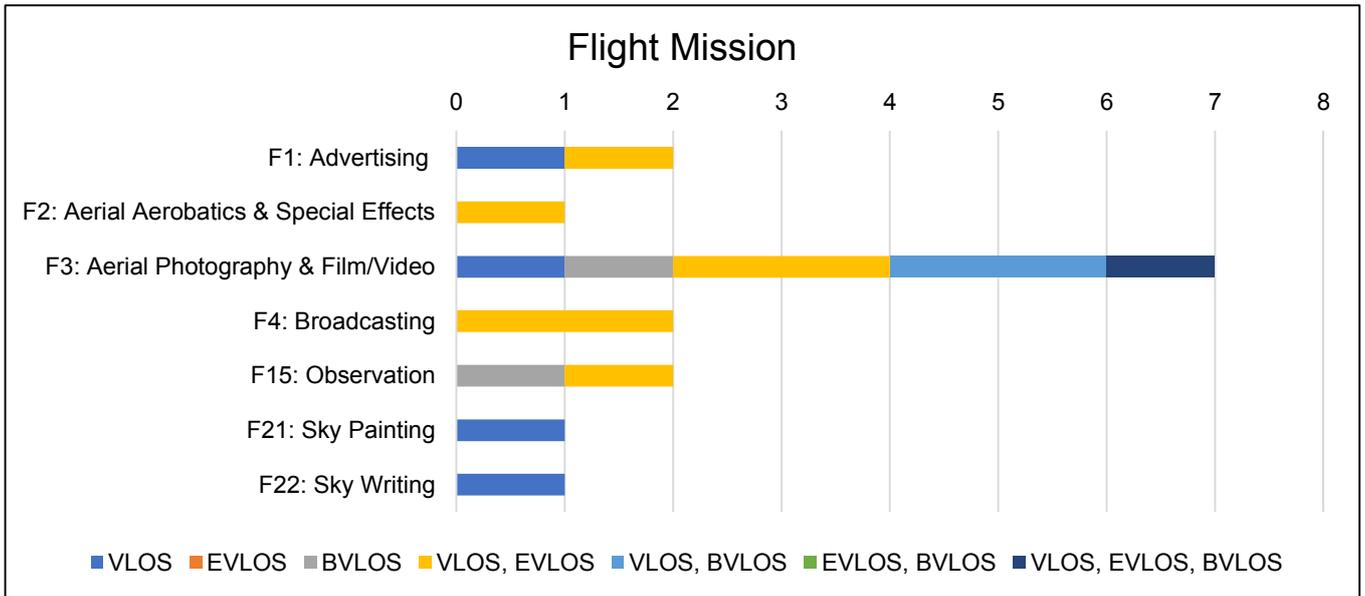
**DETAILED RESULTS**



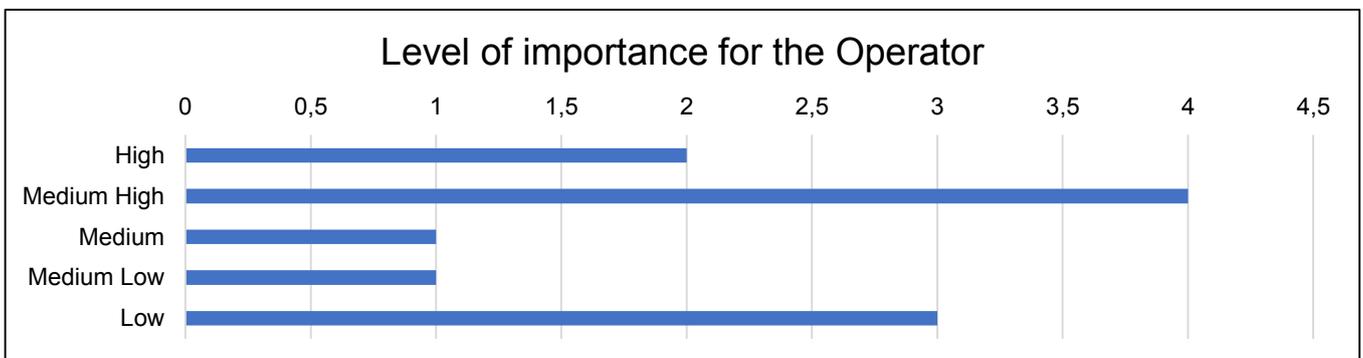
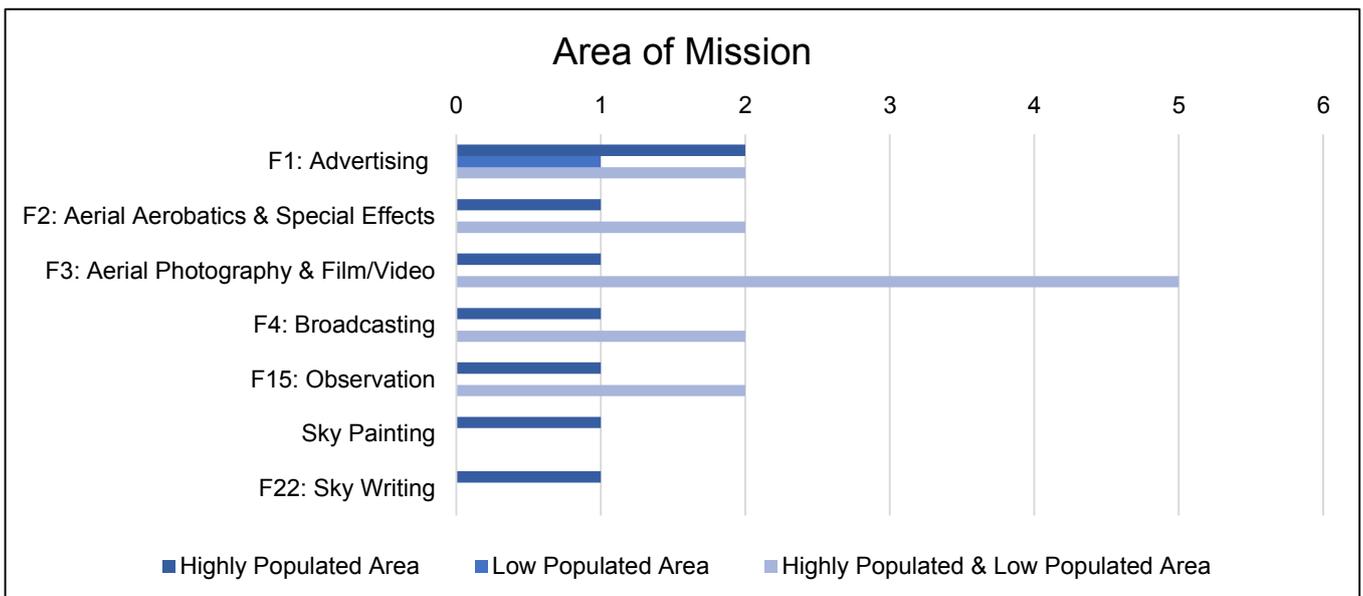
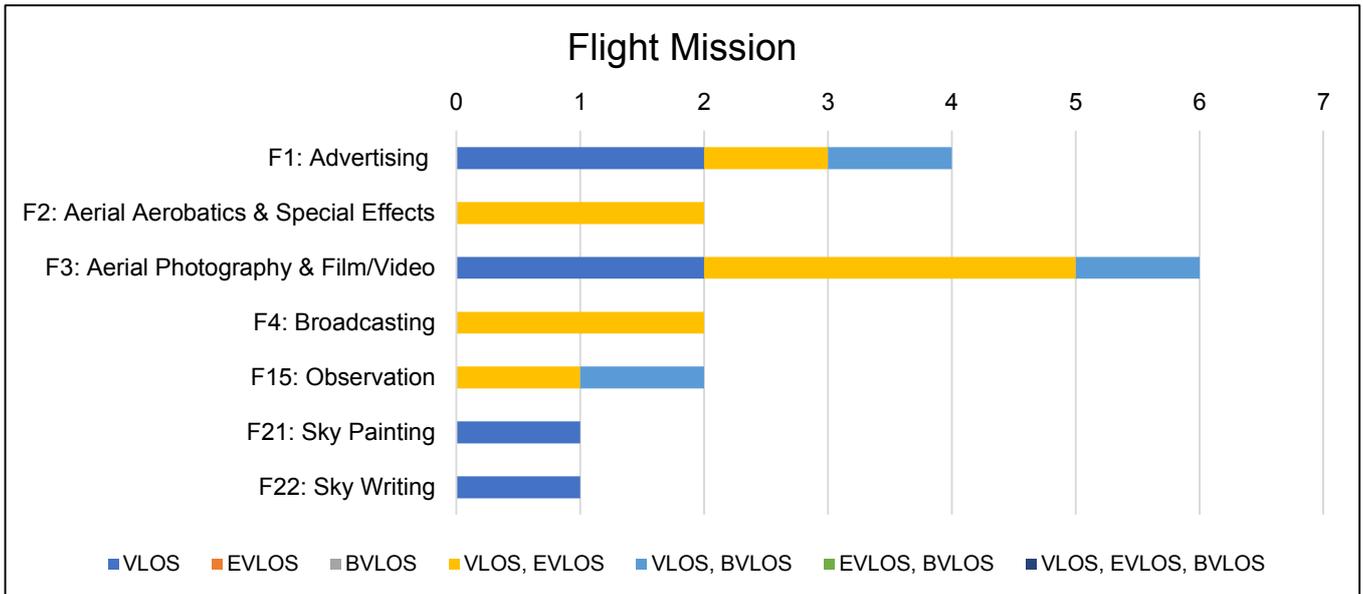
## Survey on Drone Operations & Safety Risk Analysis Methods



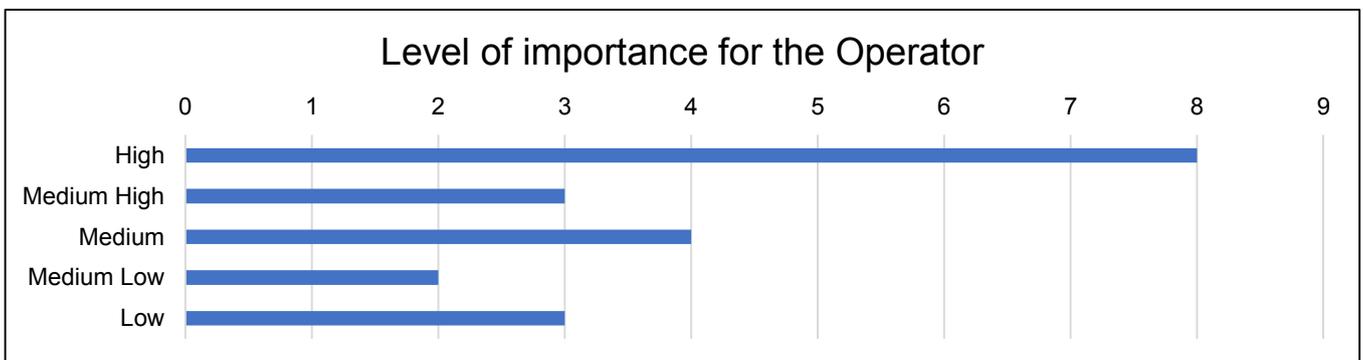
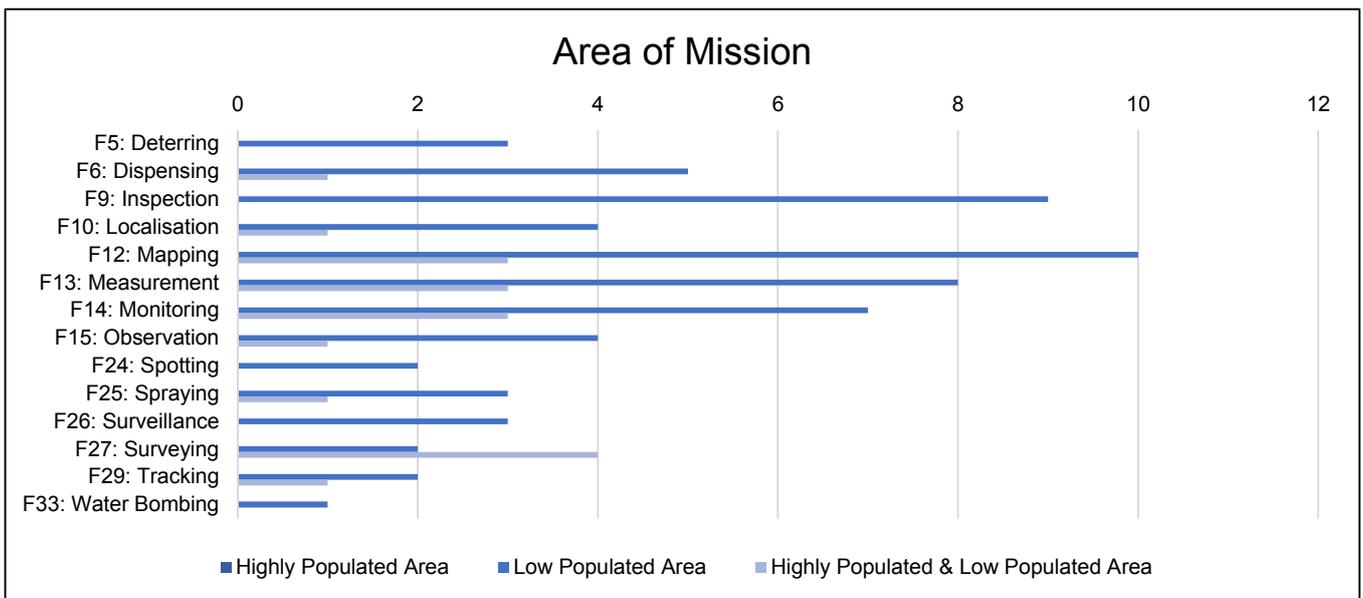
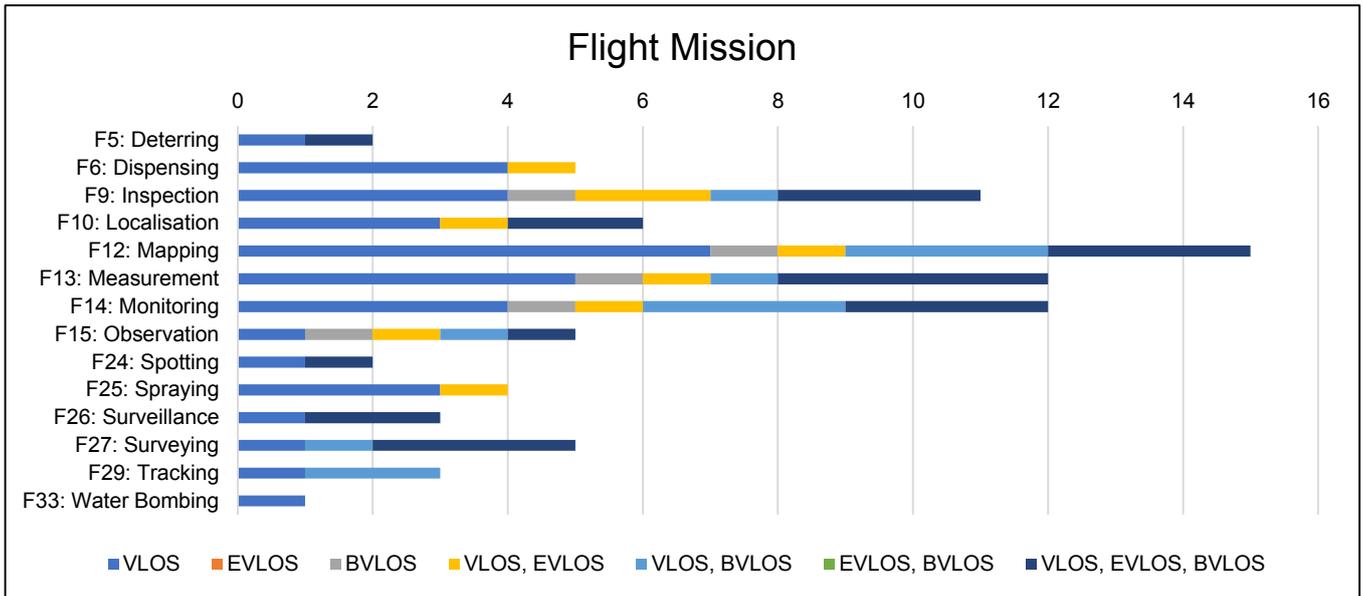
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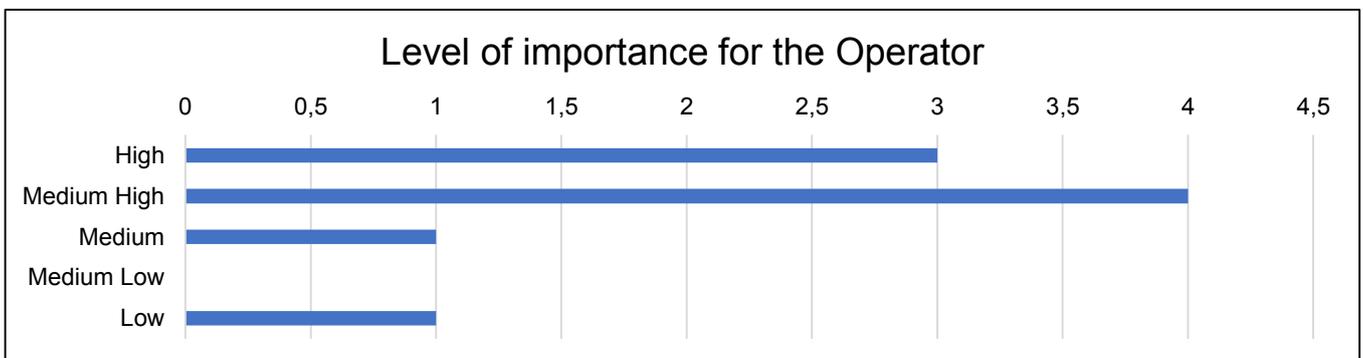
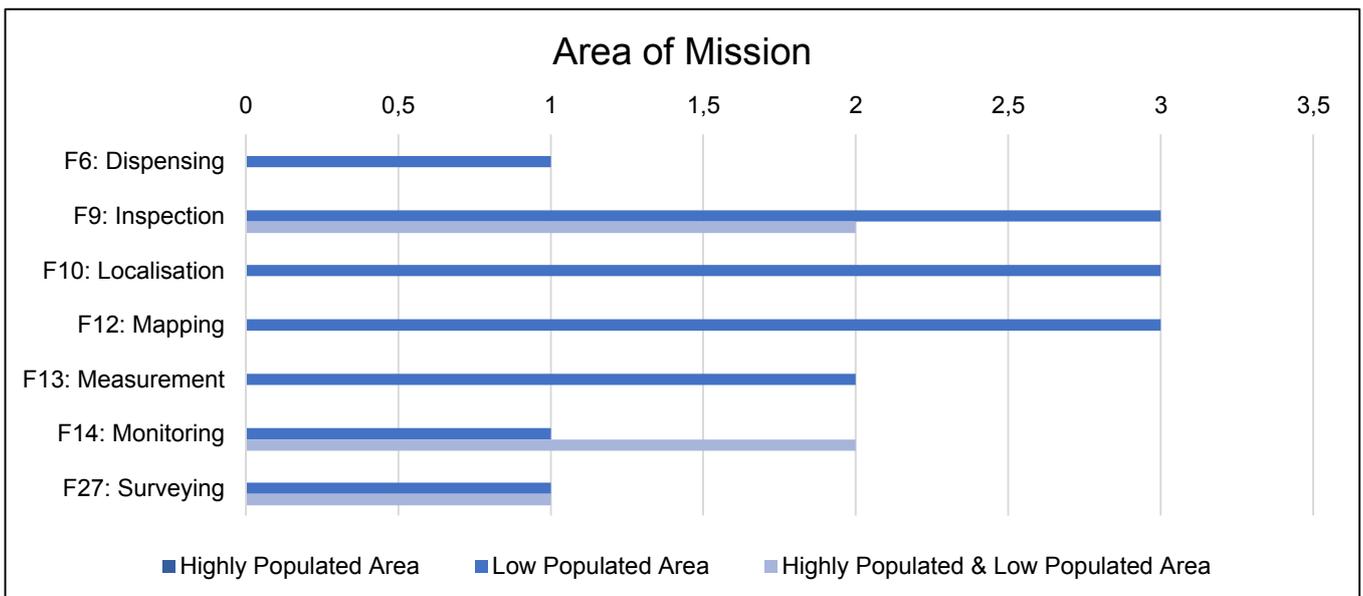
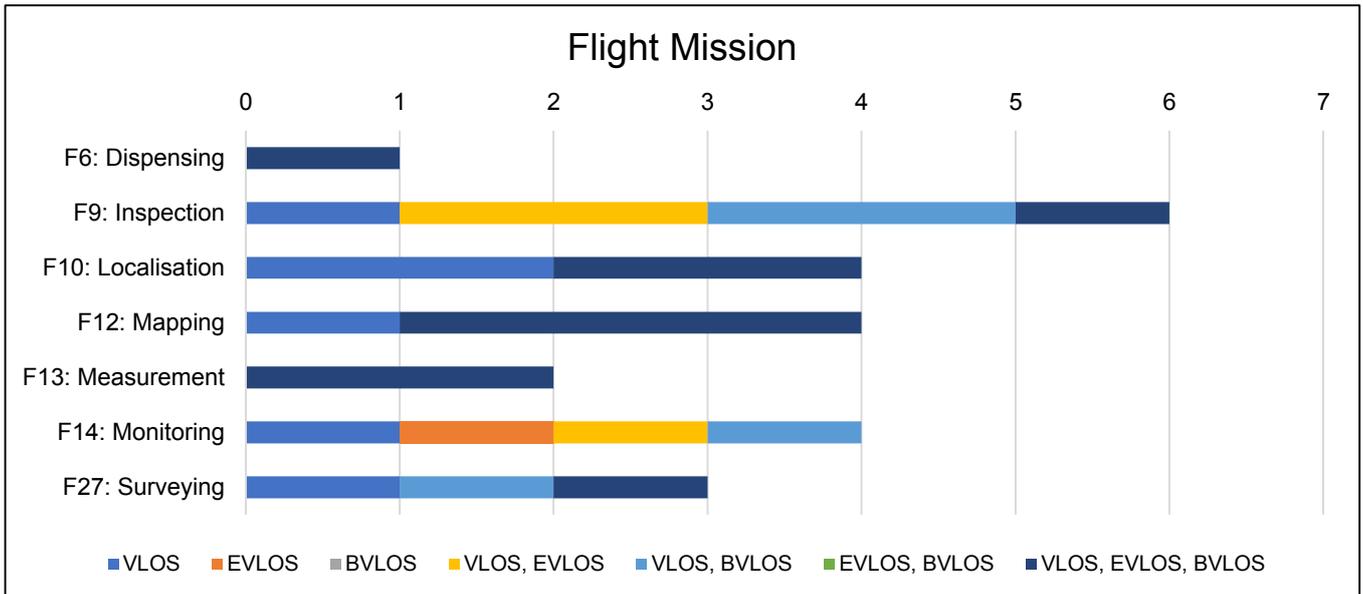
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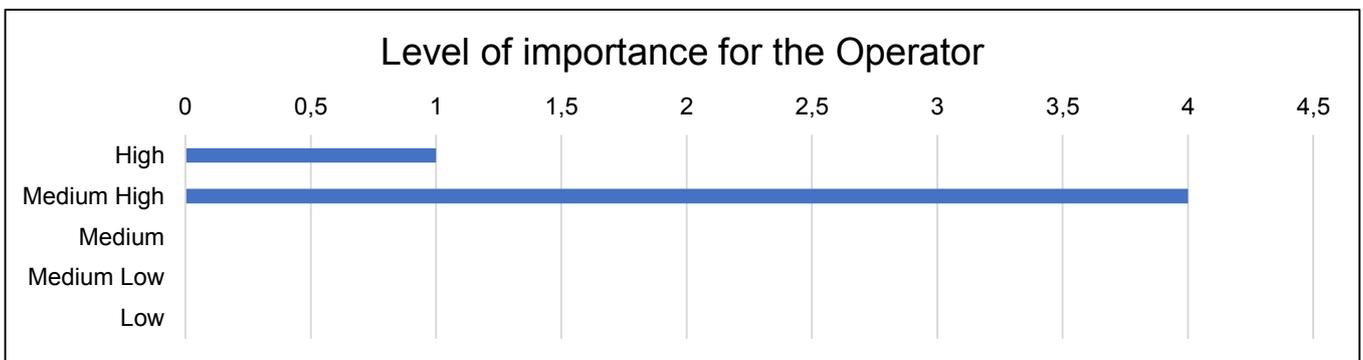
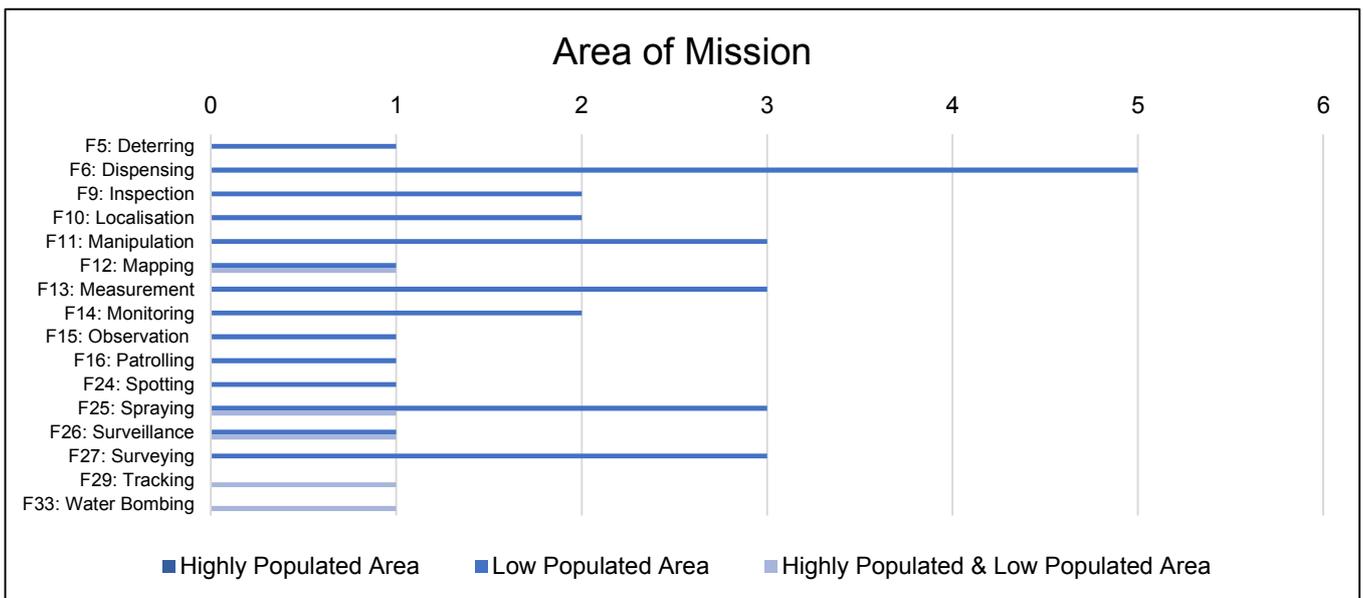
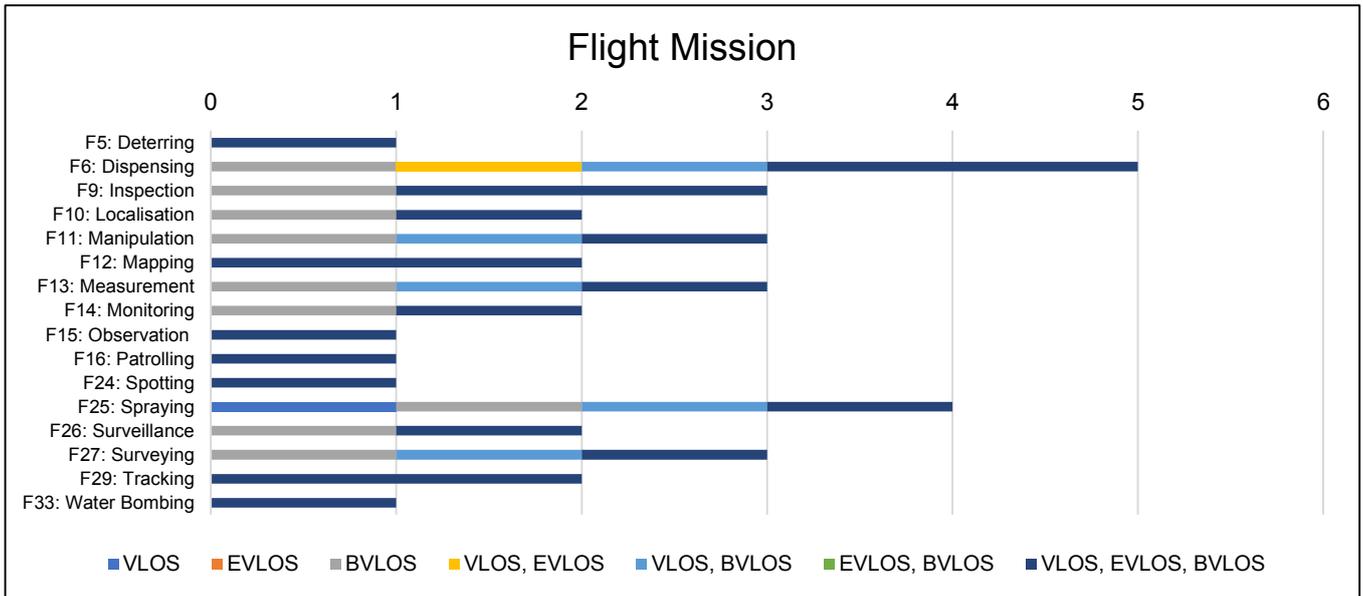
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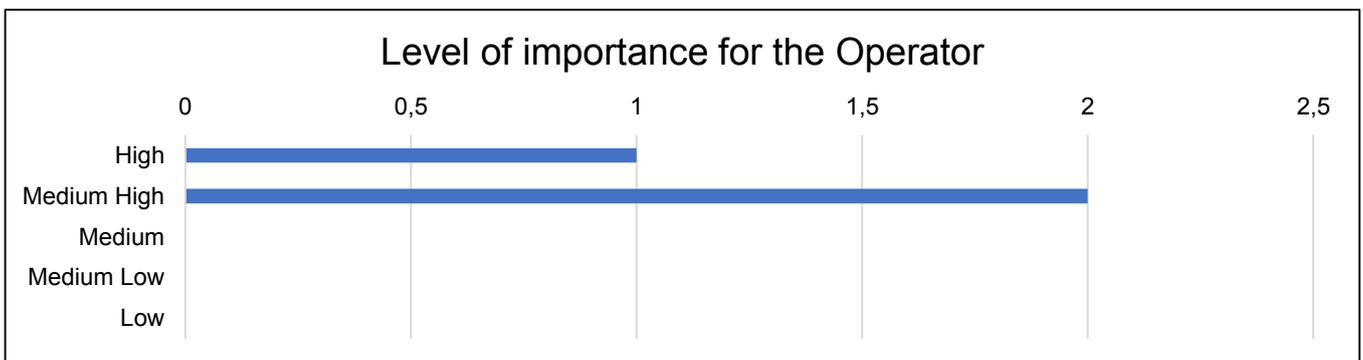
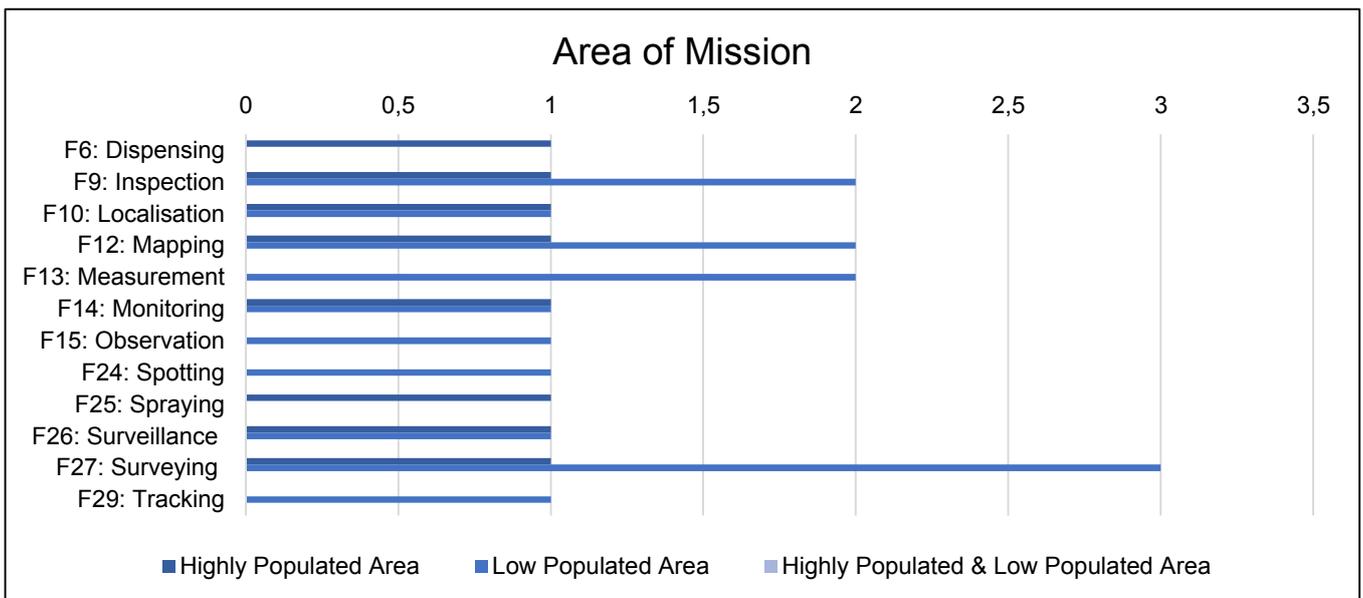
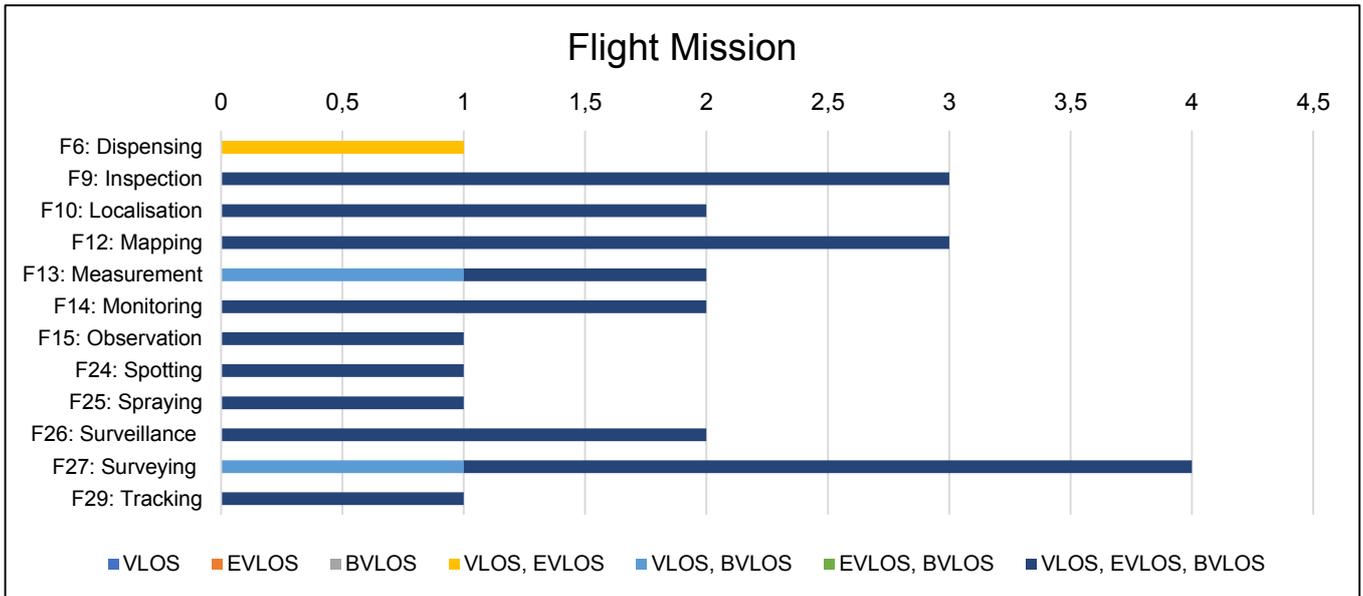
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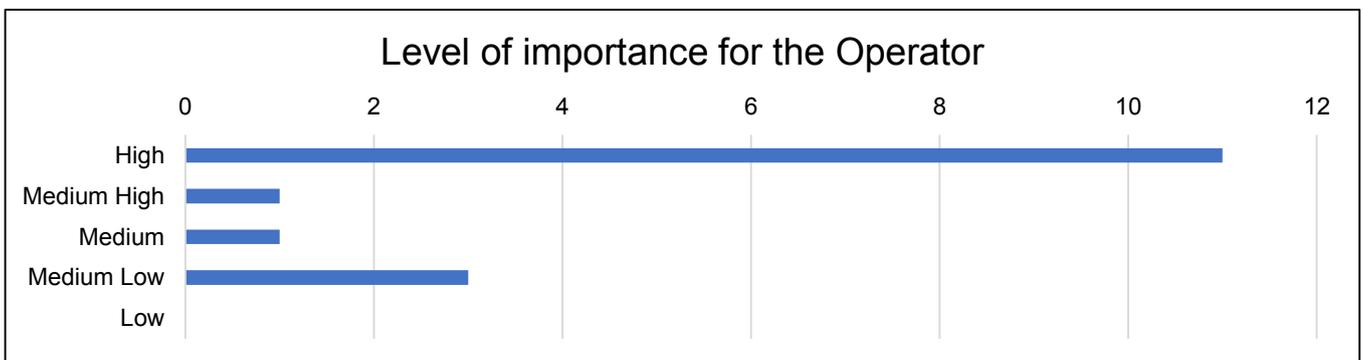
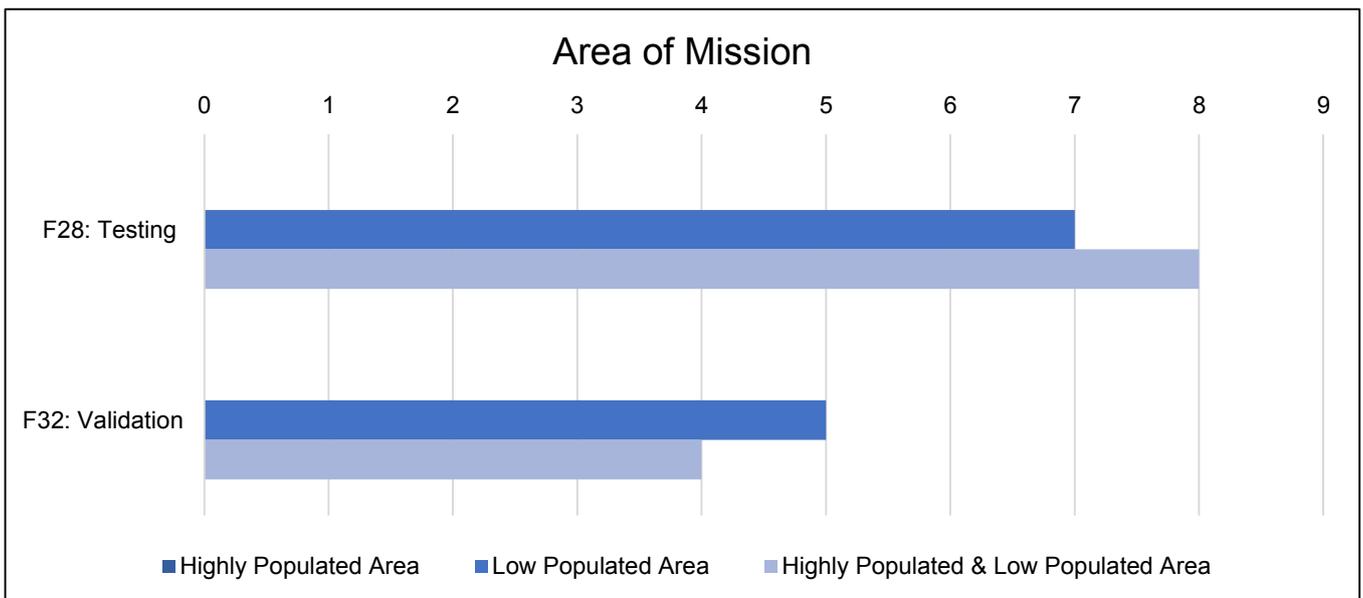
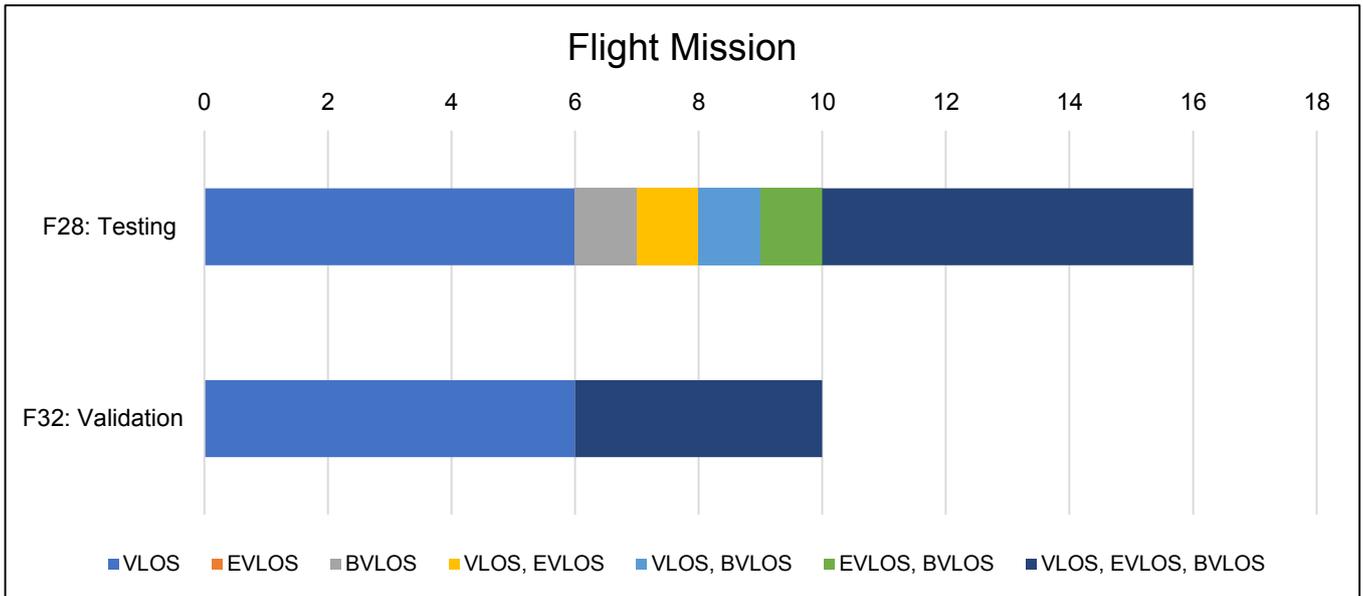
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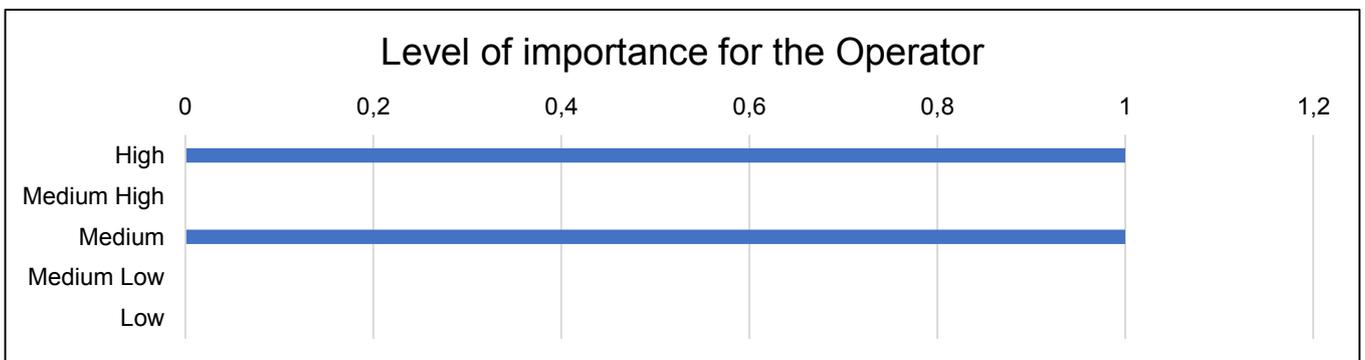
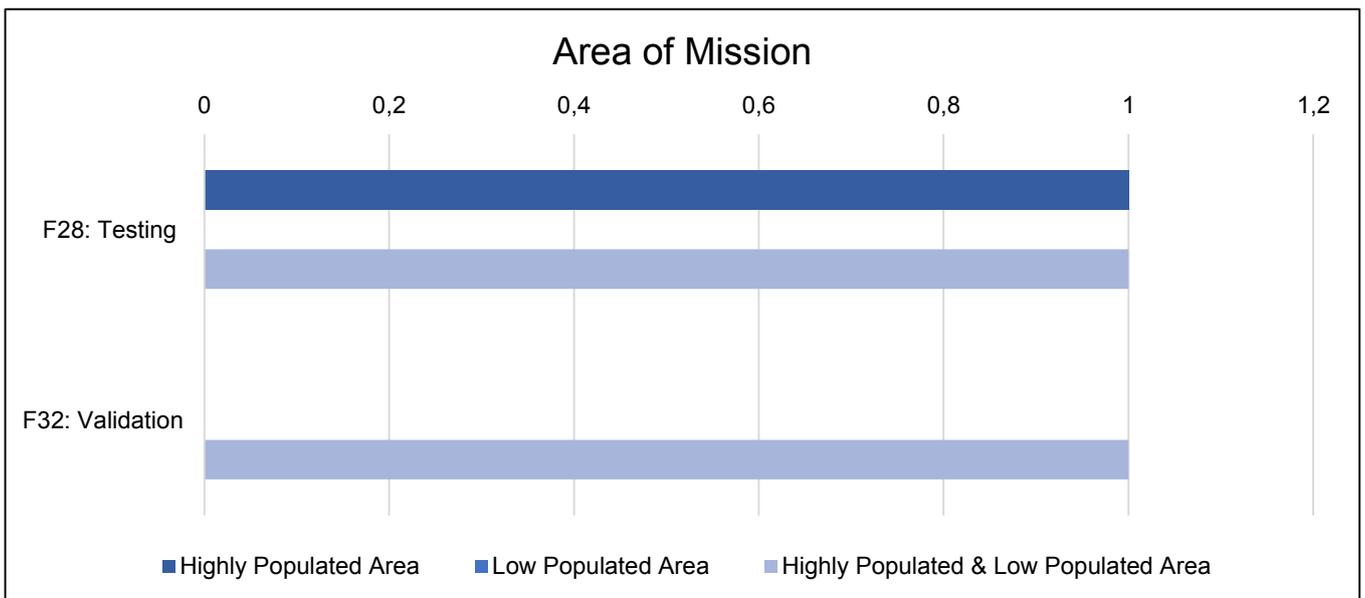
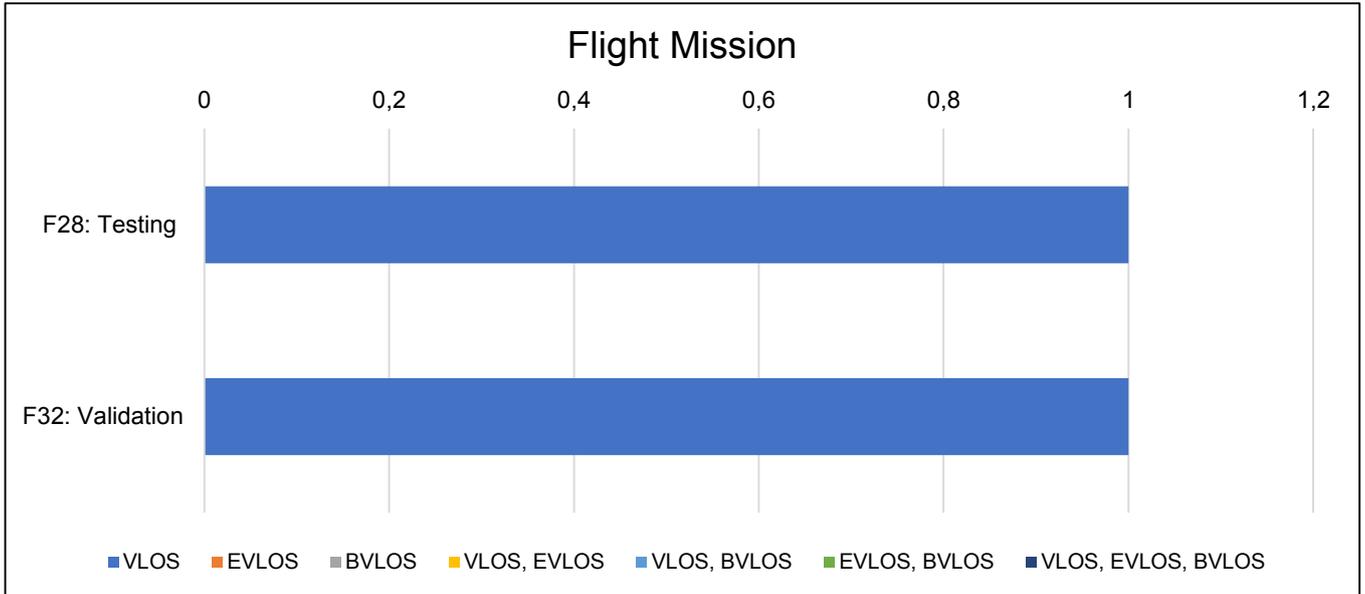
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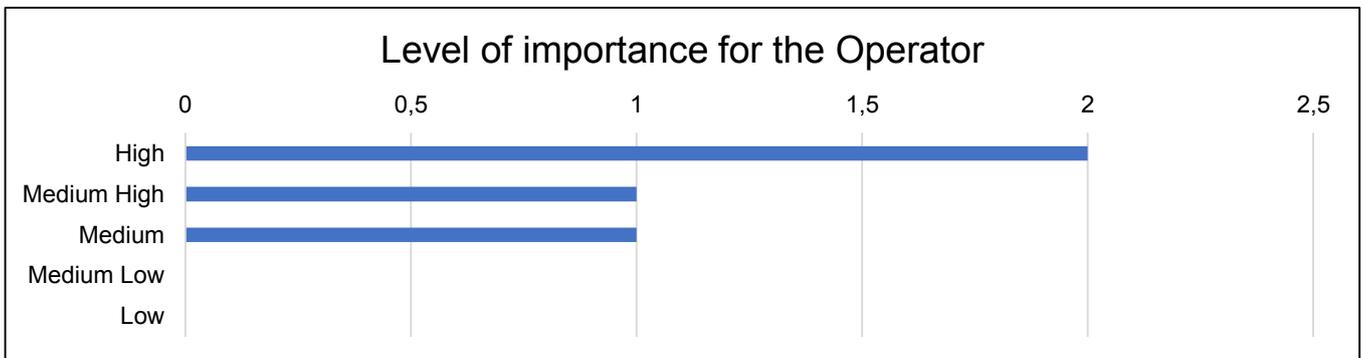
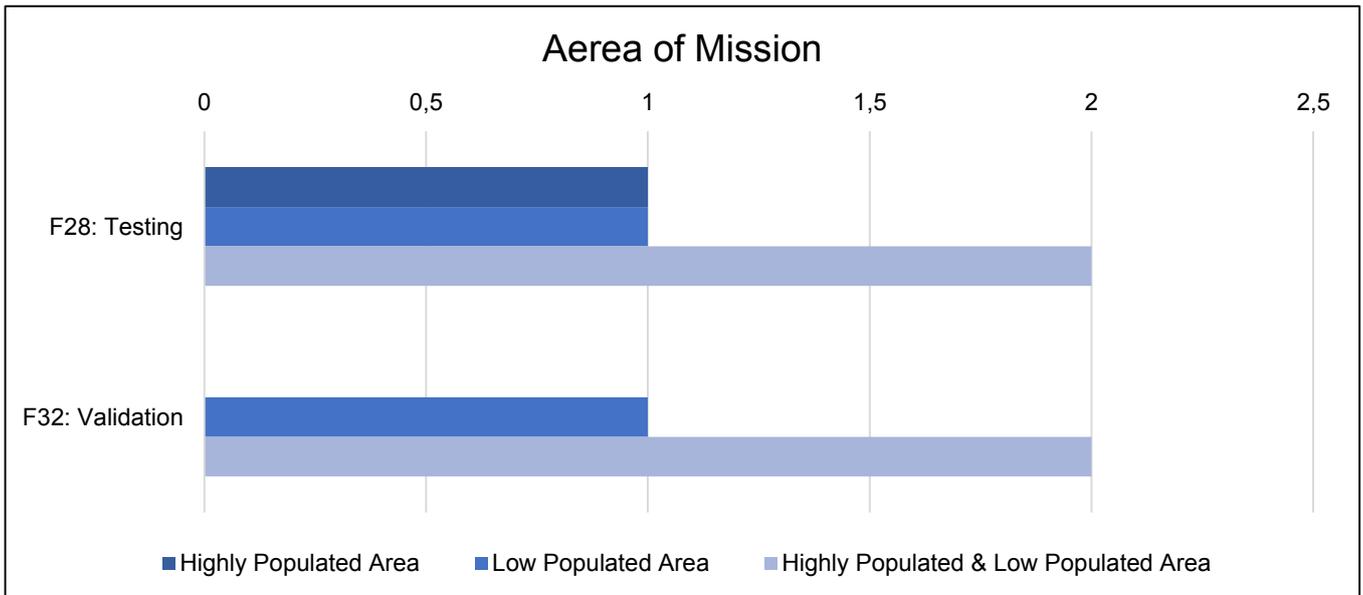
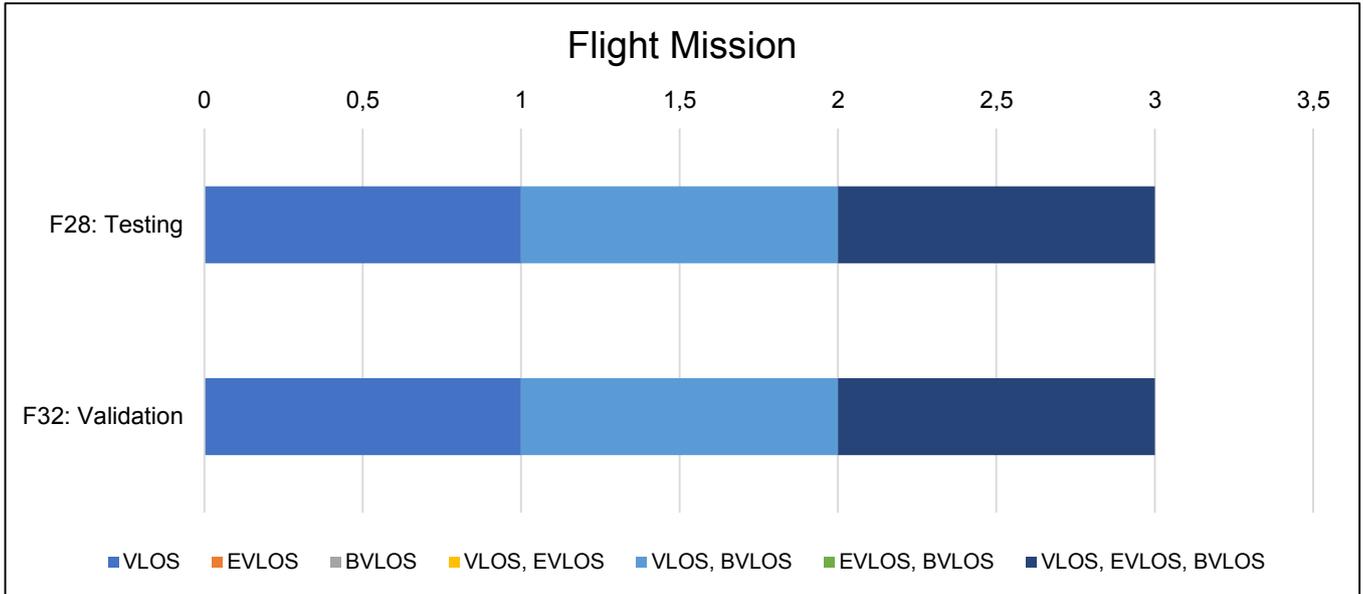
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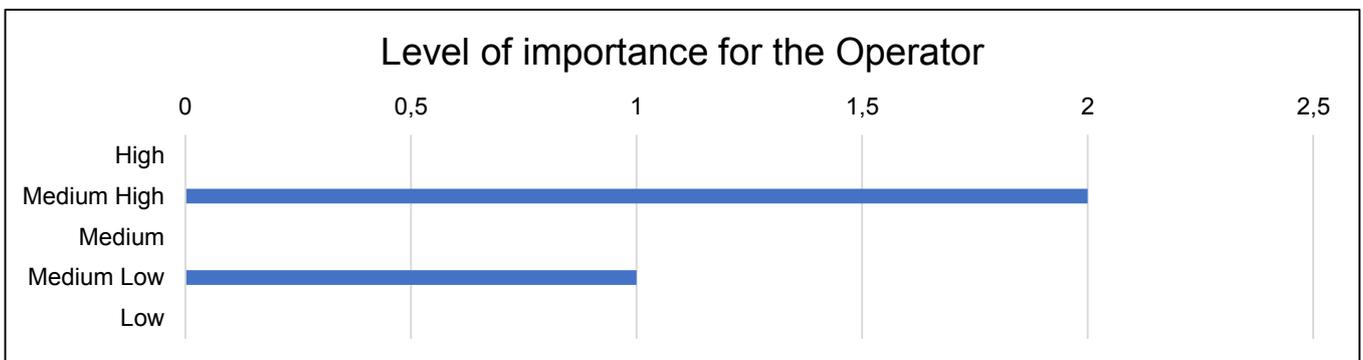
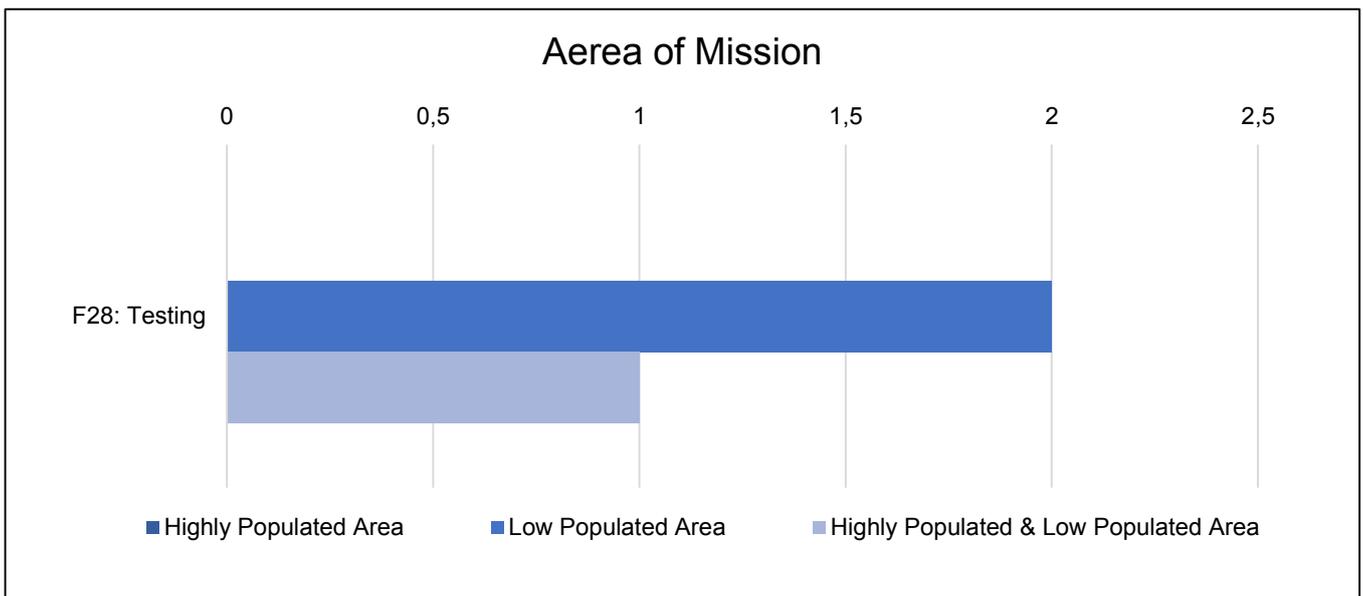
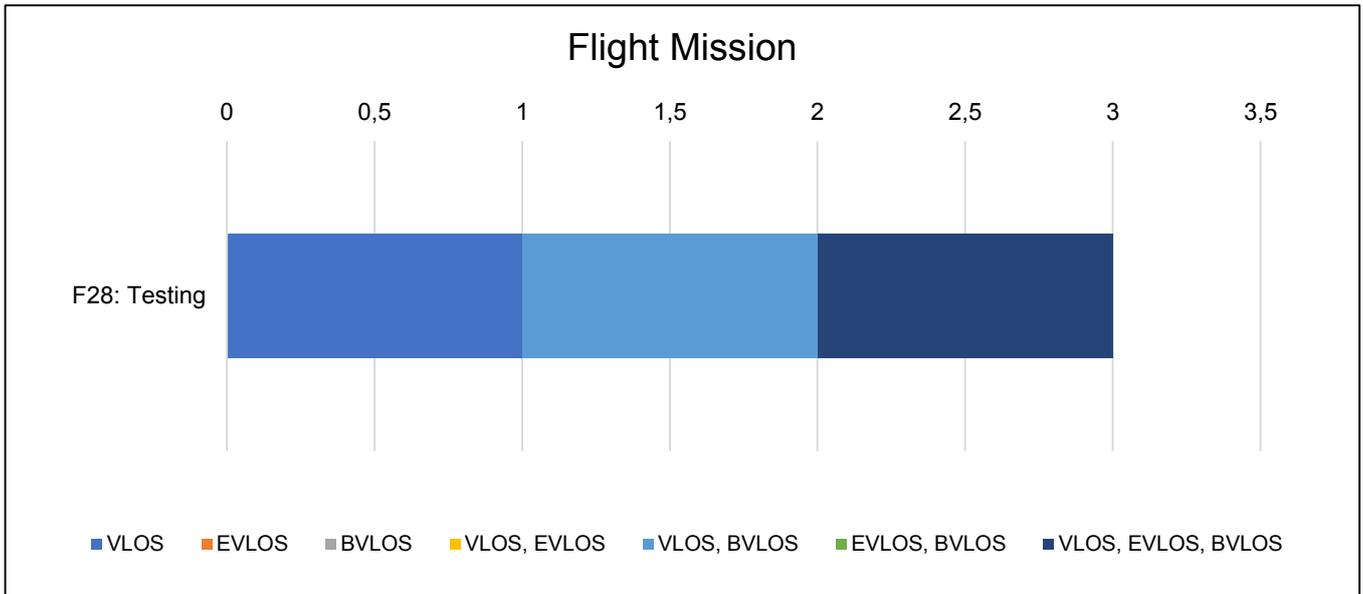
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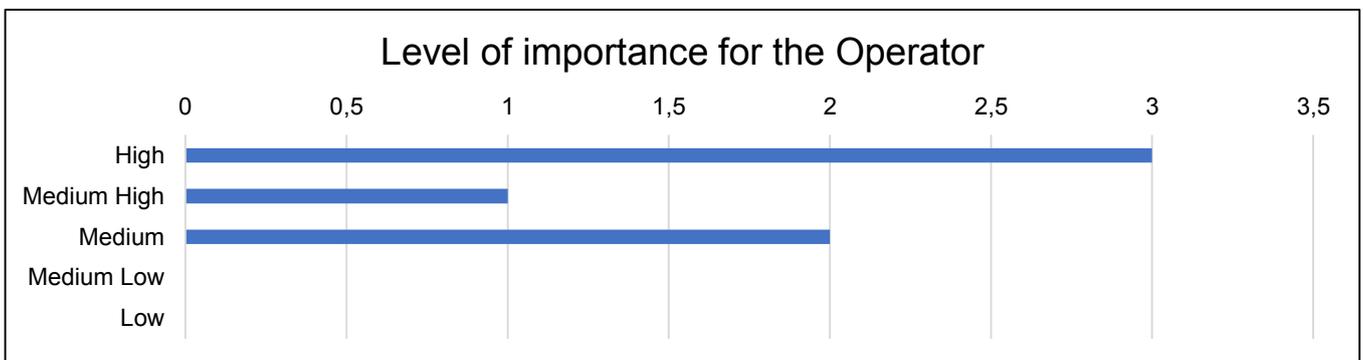
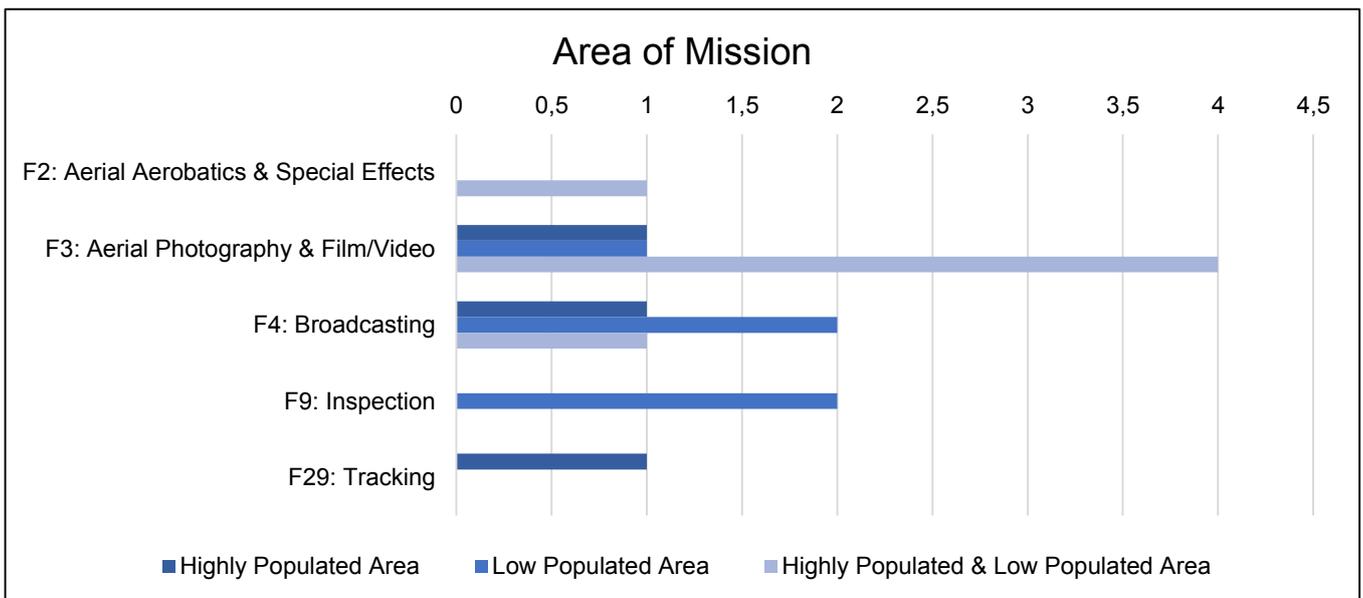
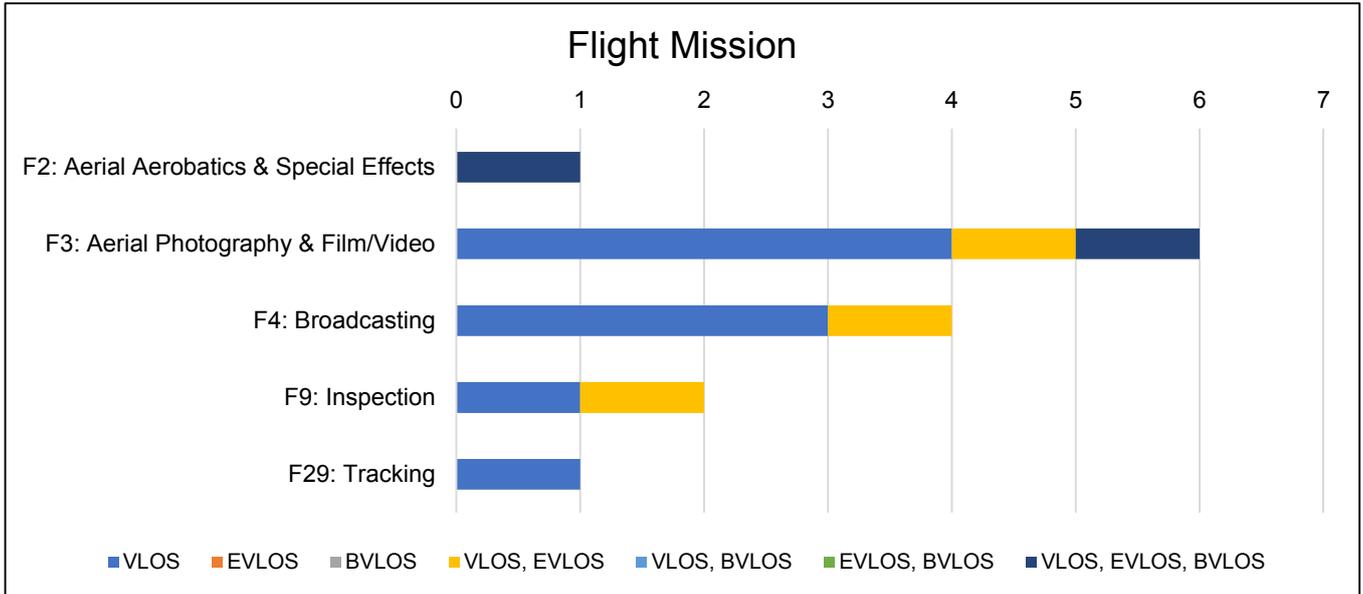
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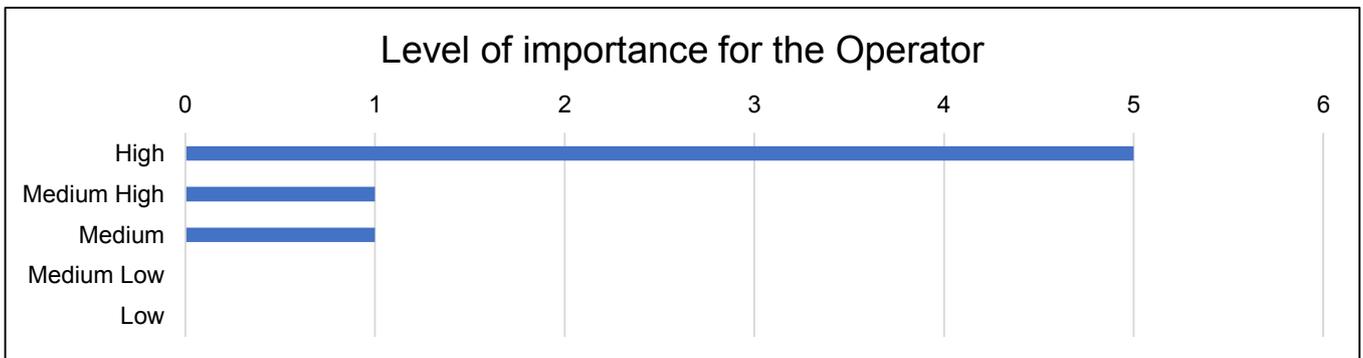
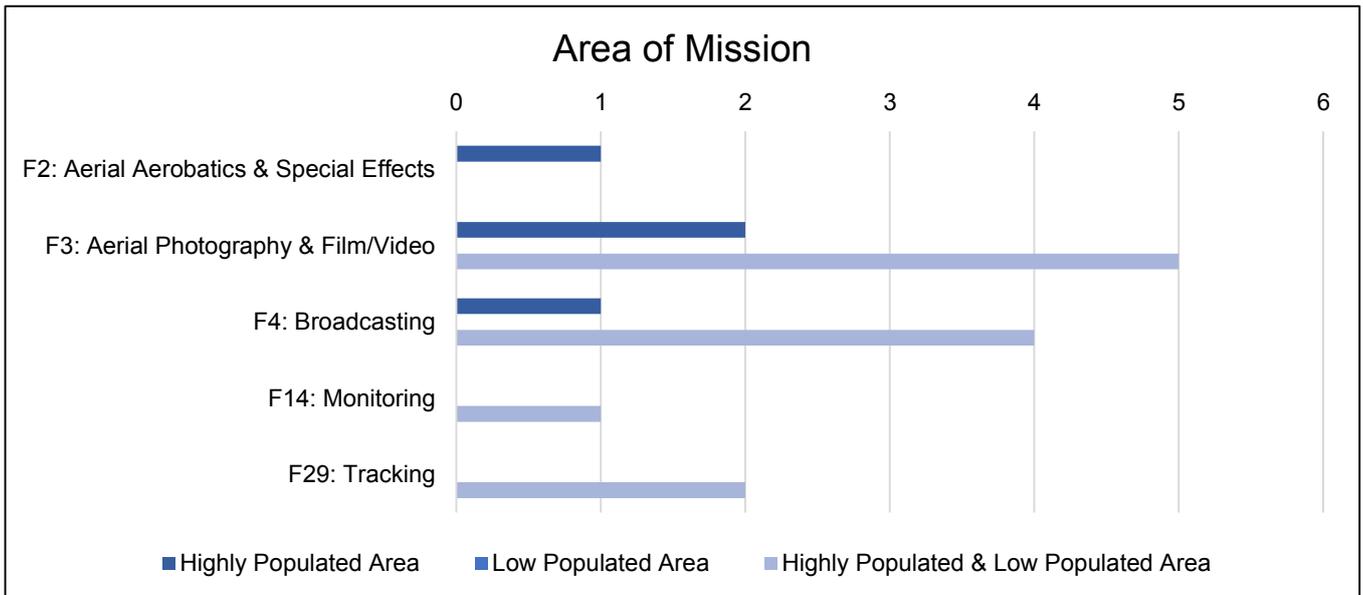
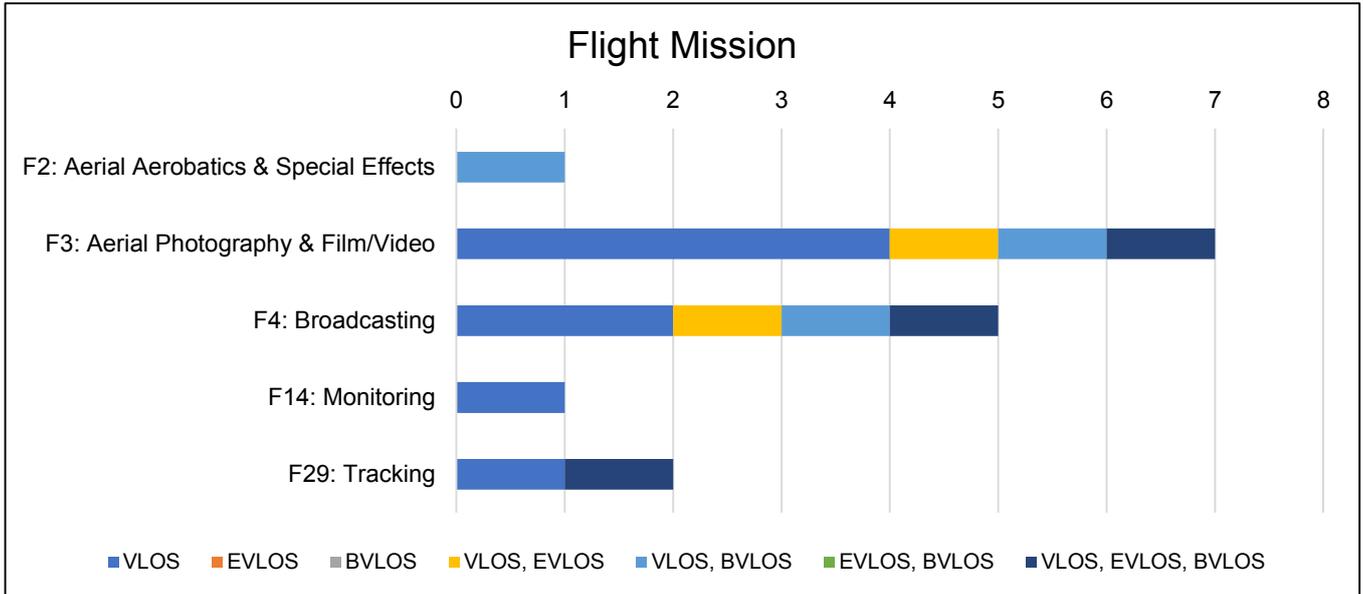
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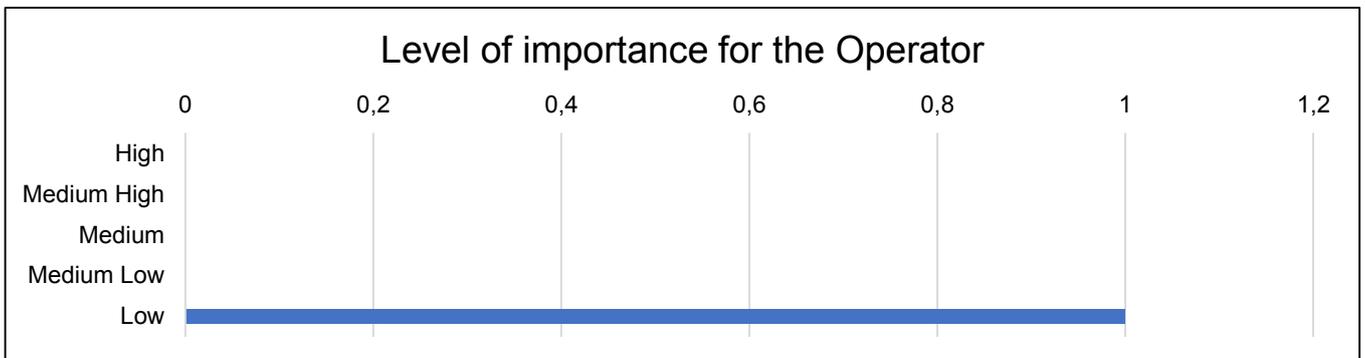
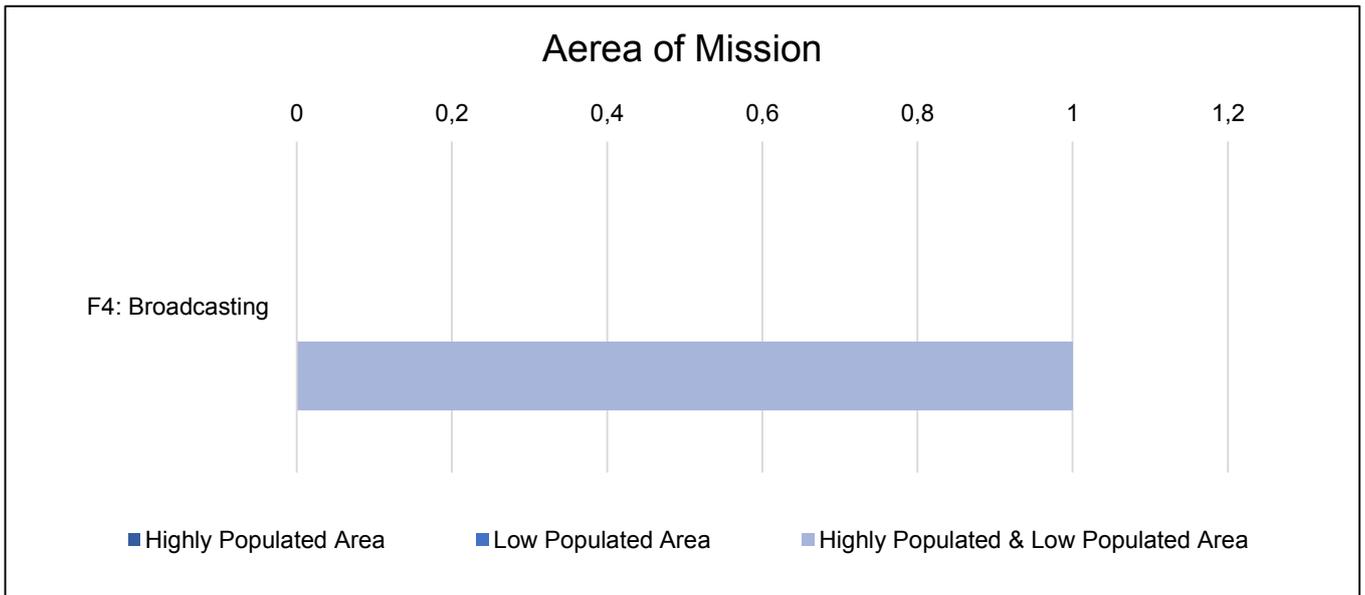
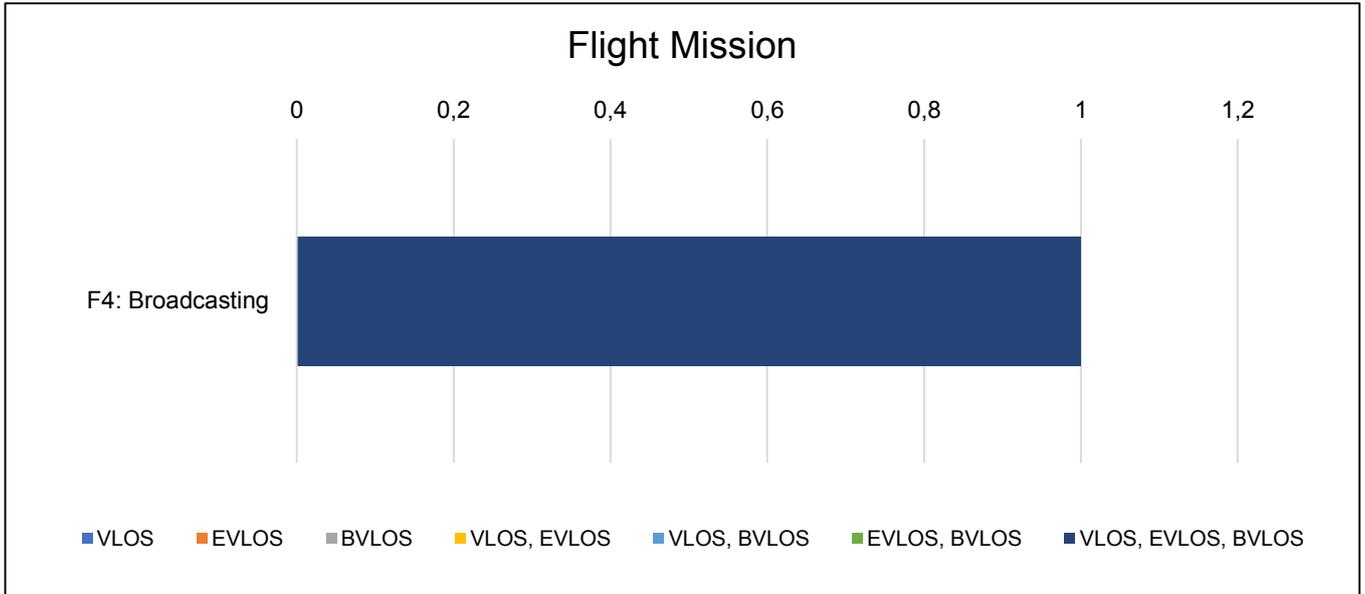
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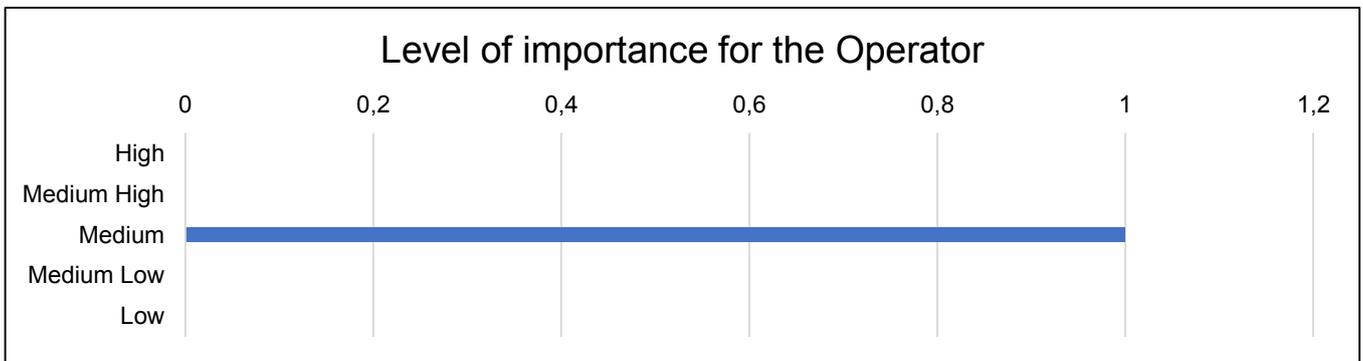
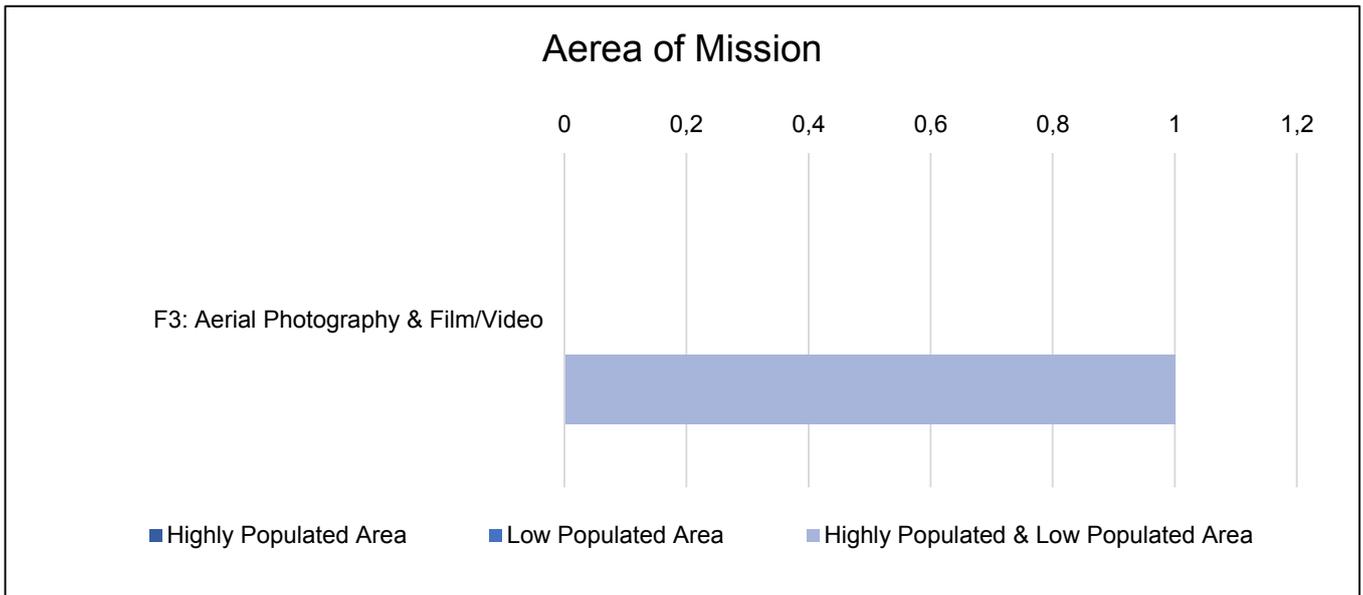
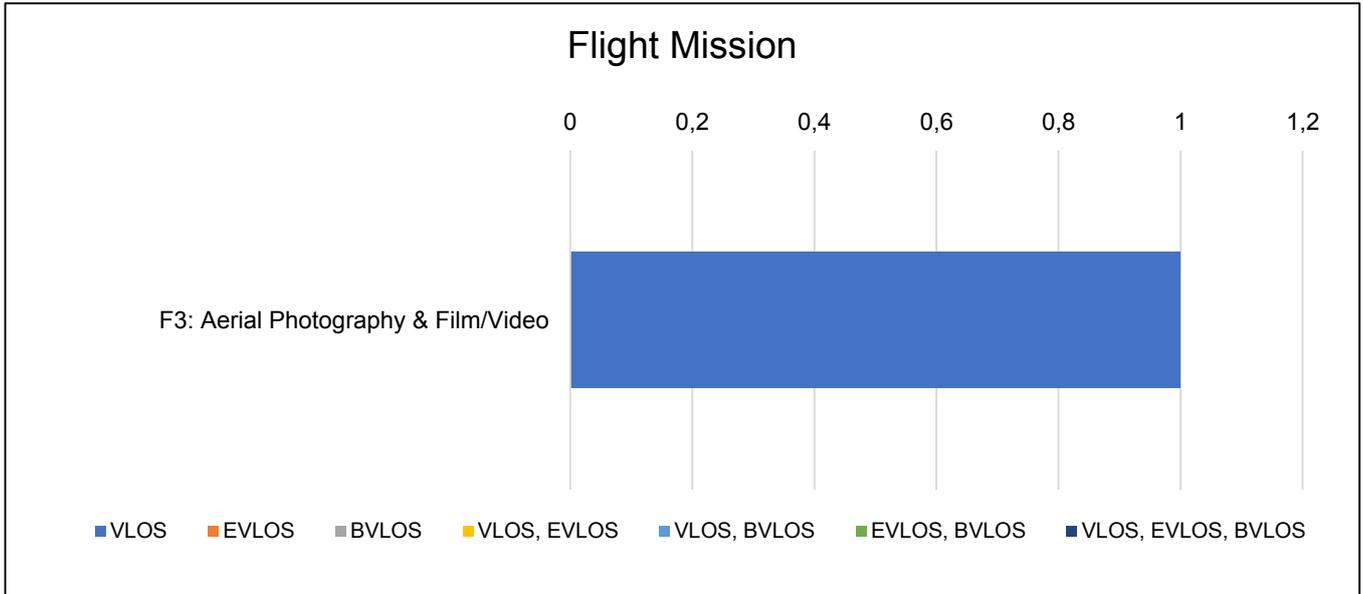
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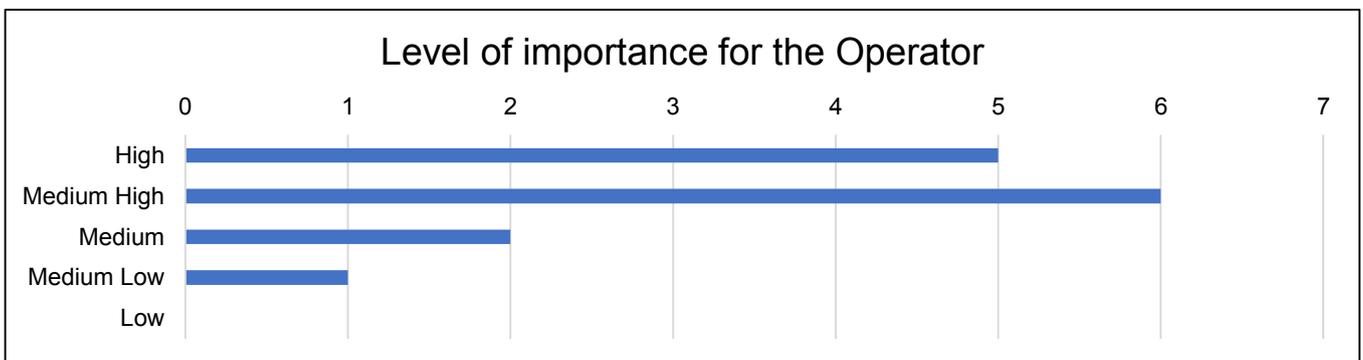
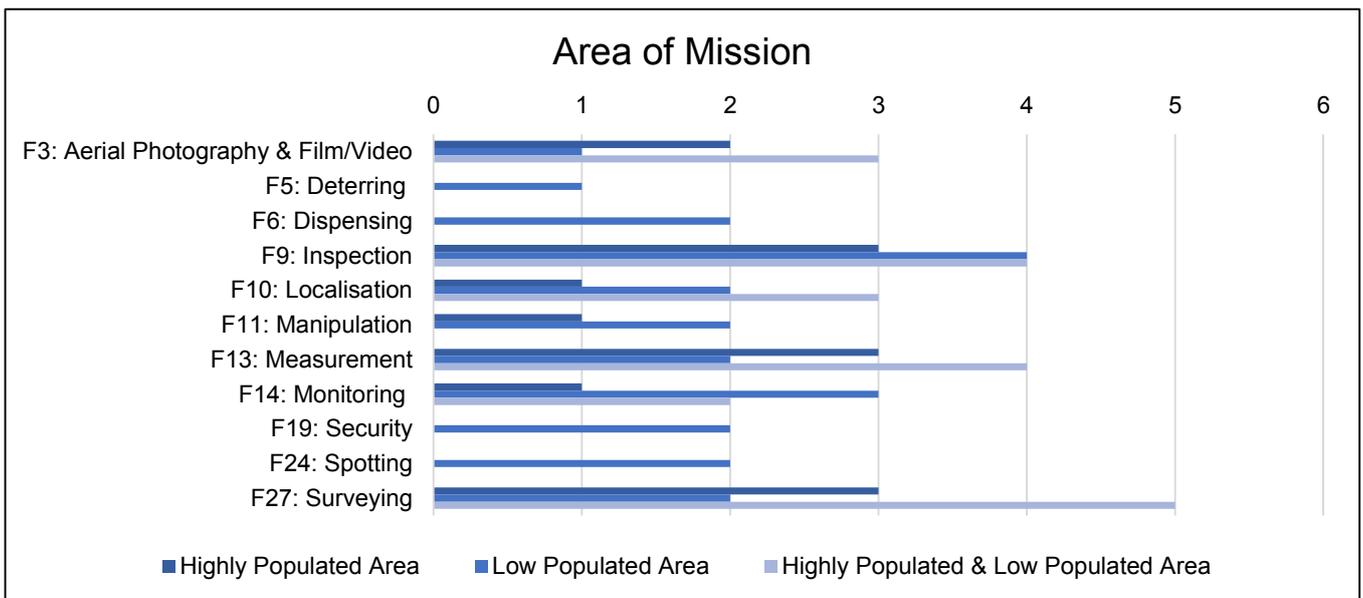
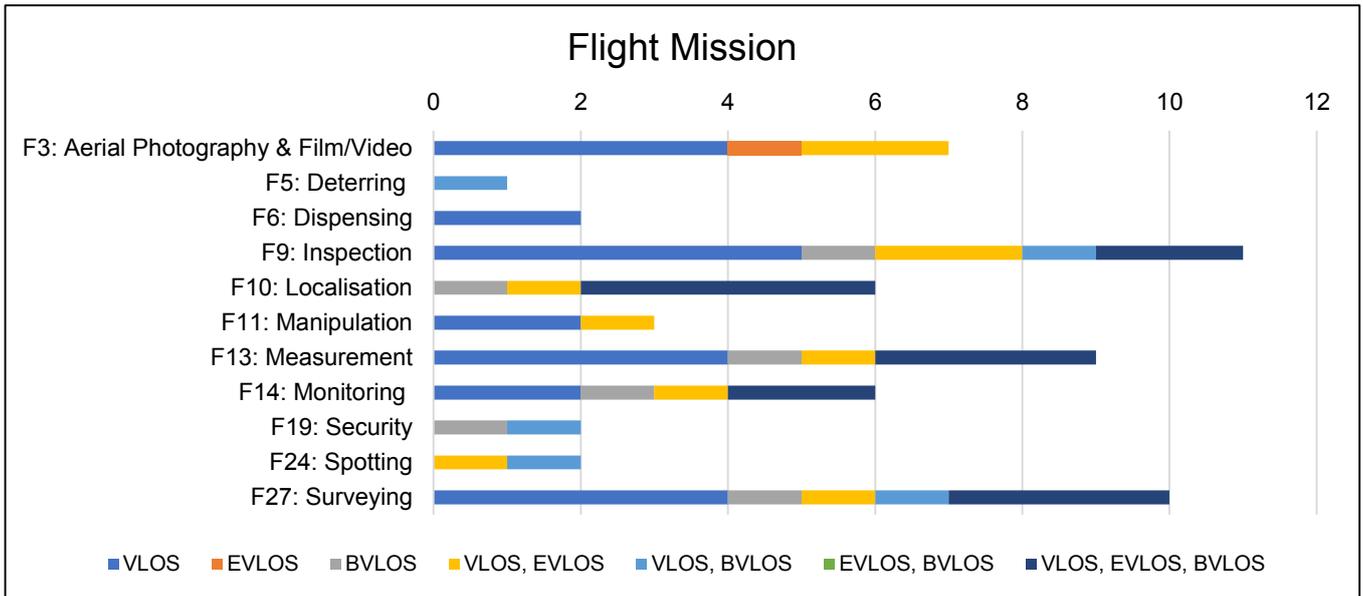
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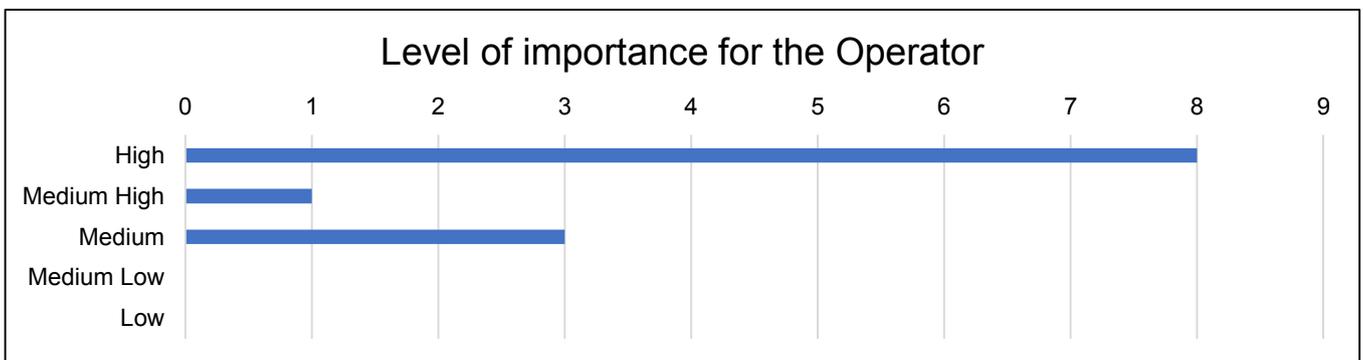
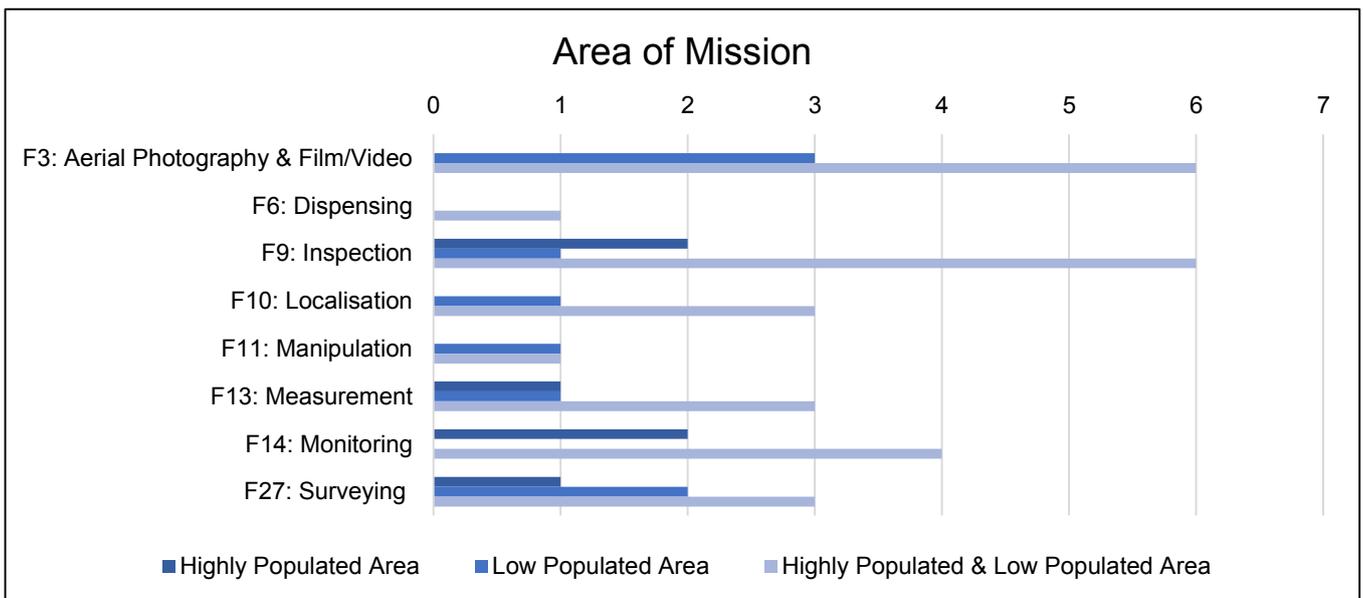
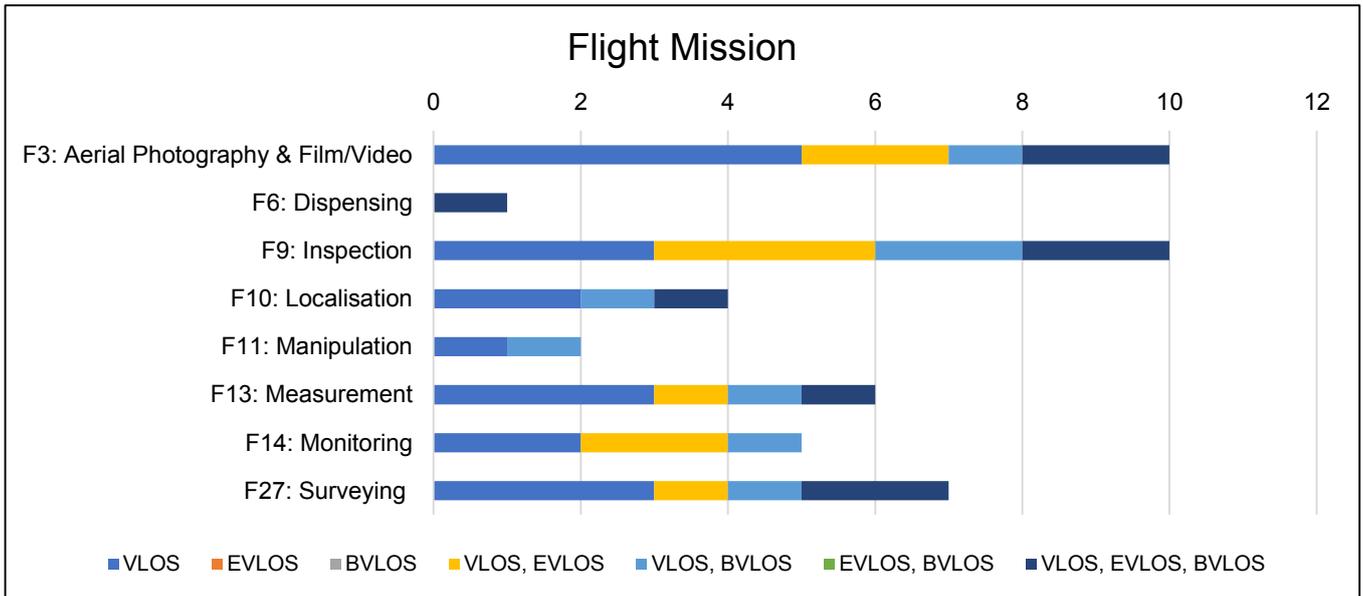
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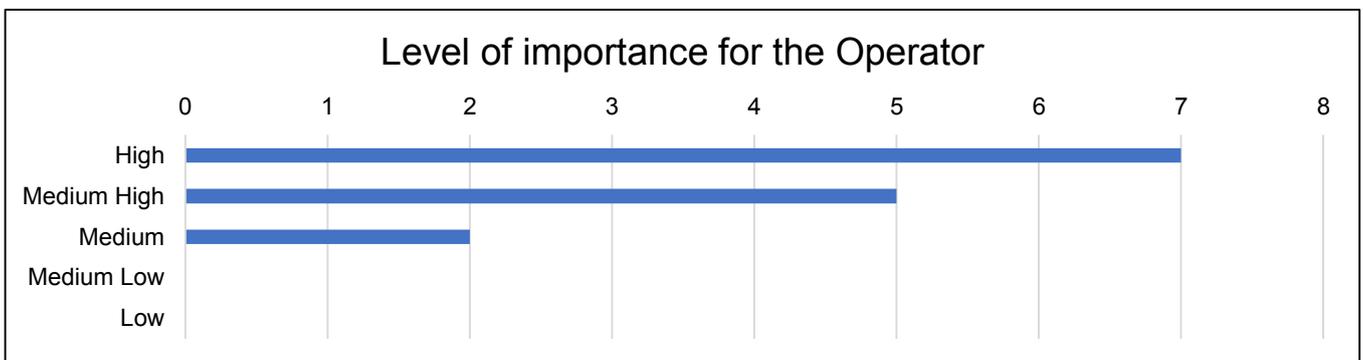
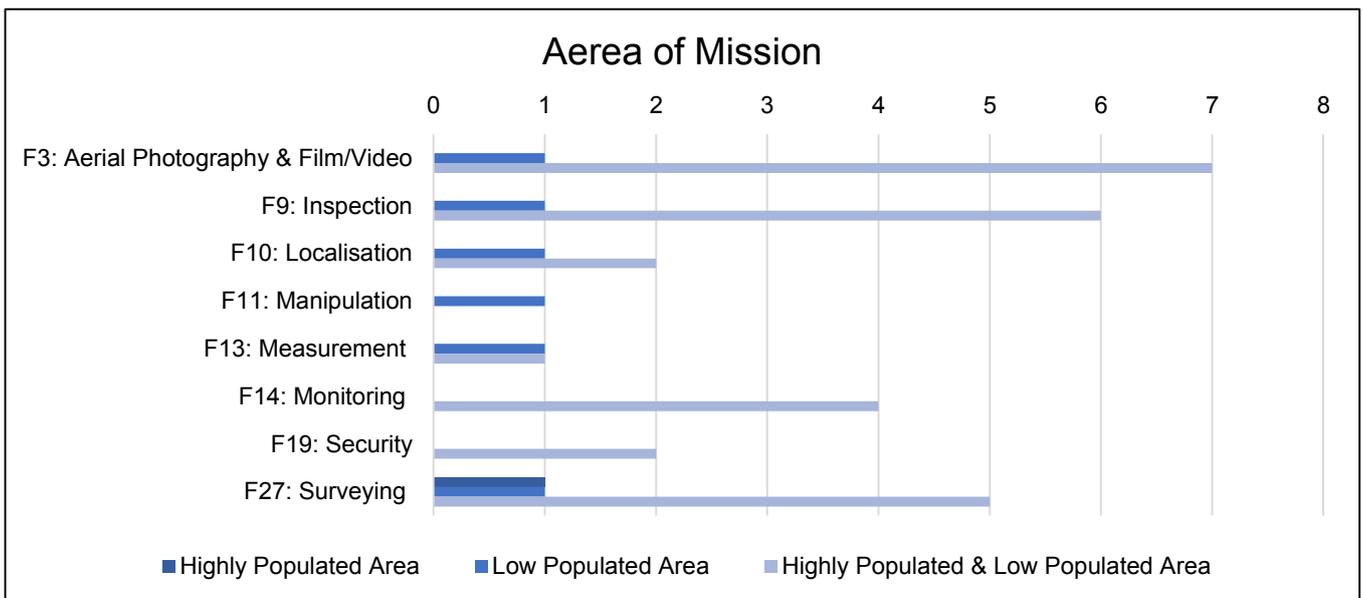
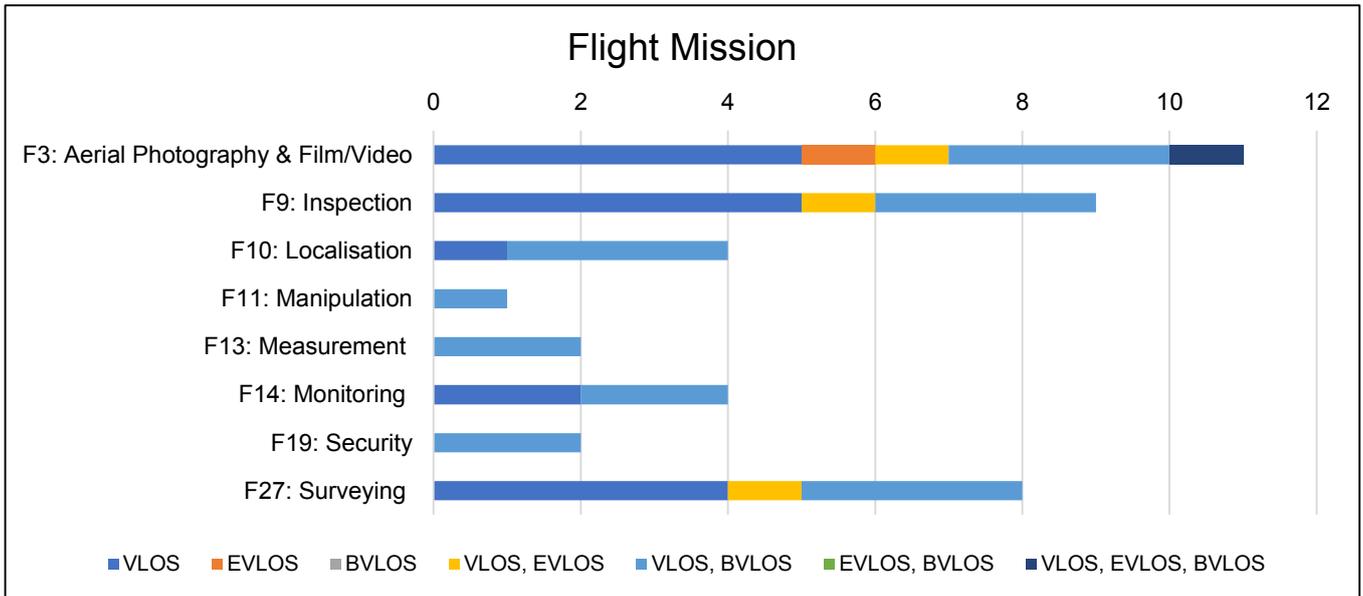
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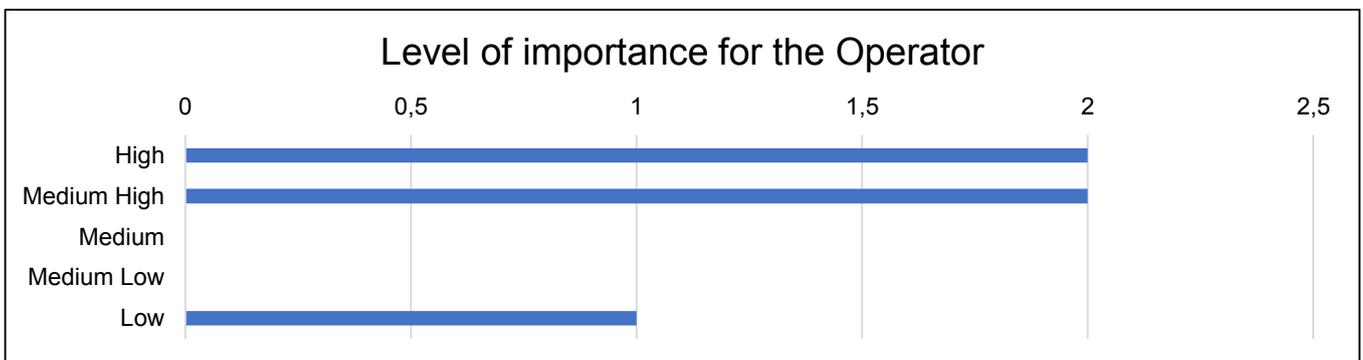
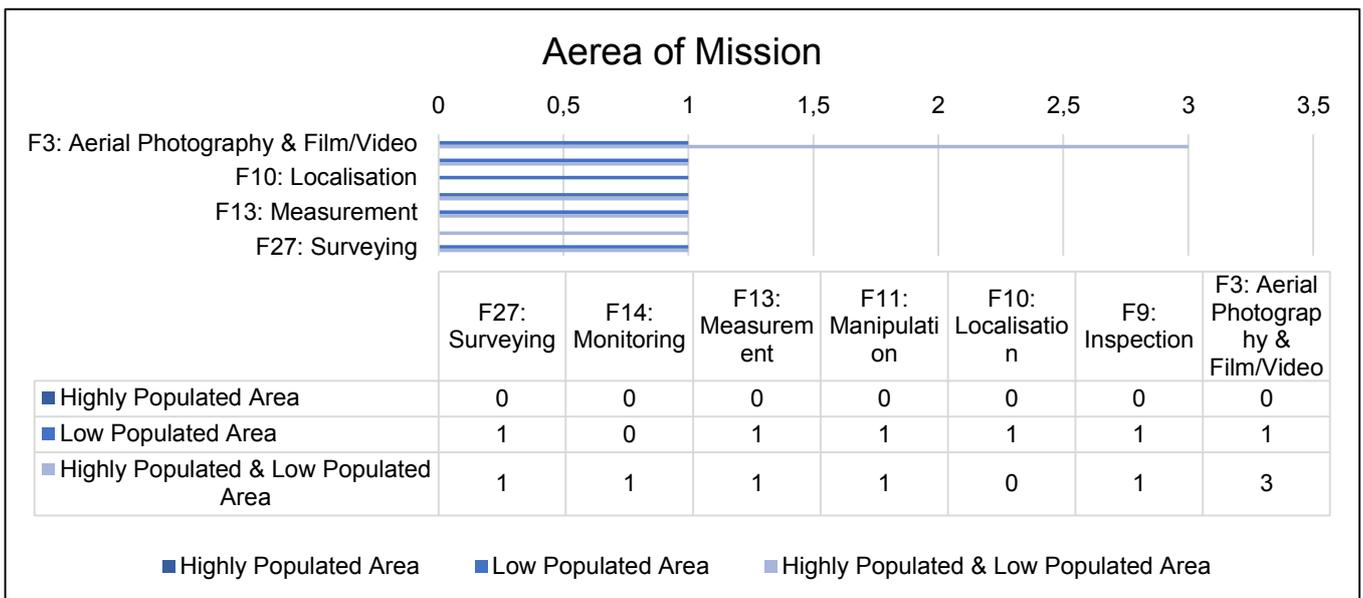
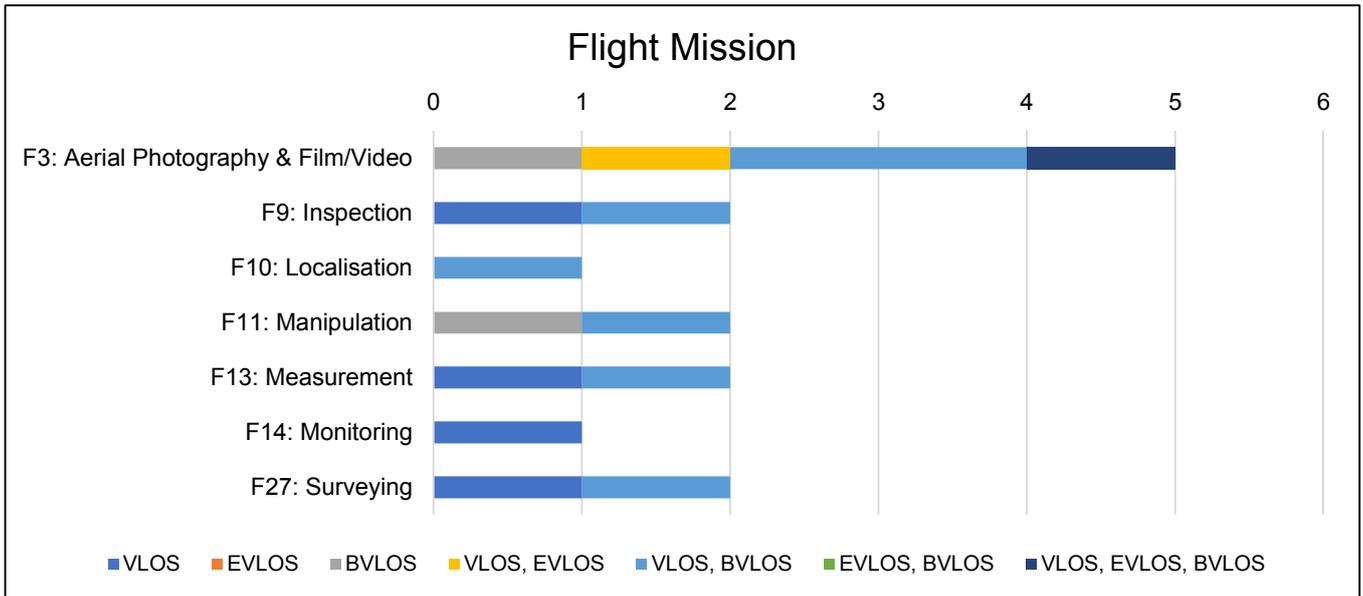
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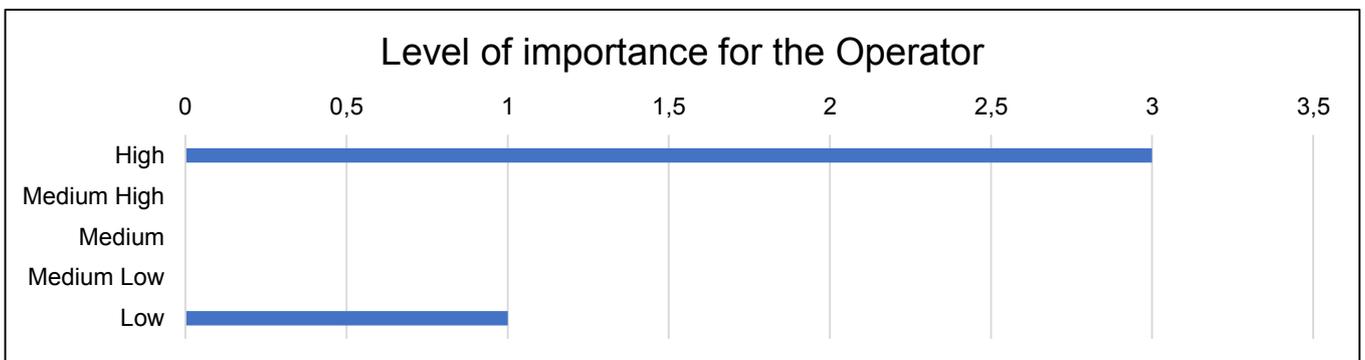
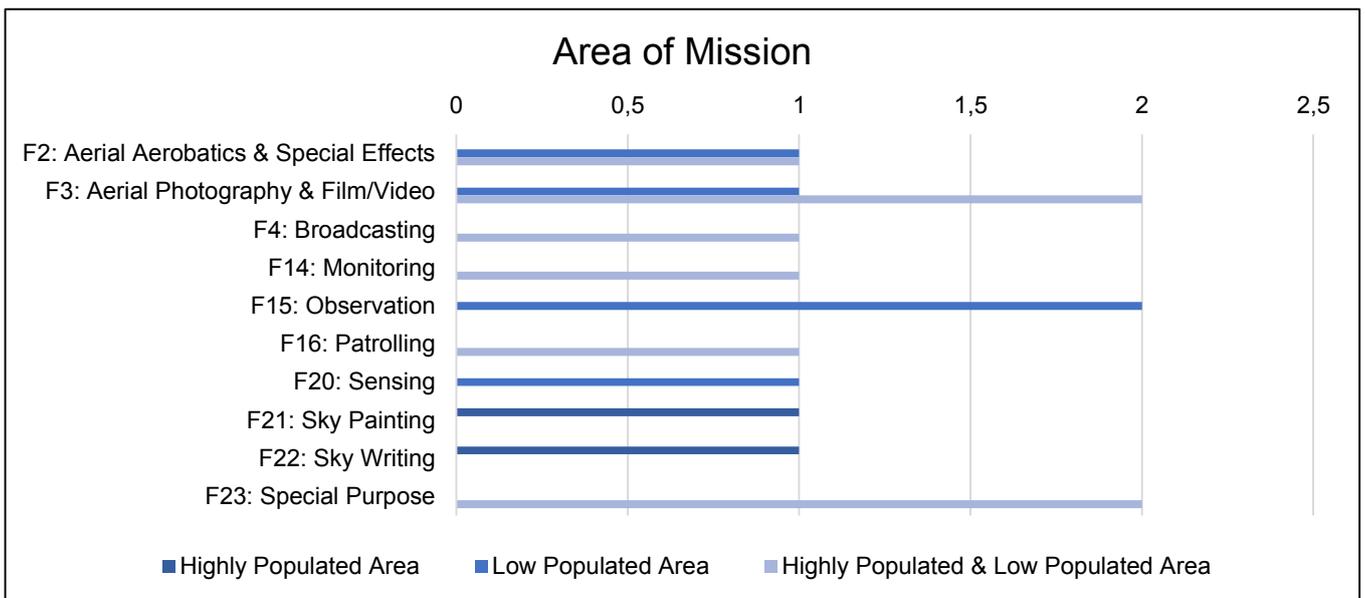
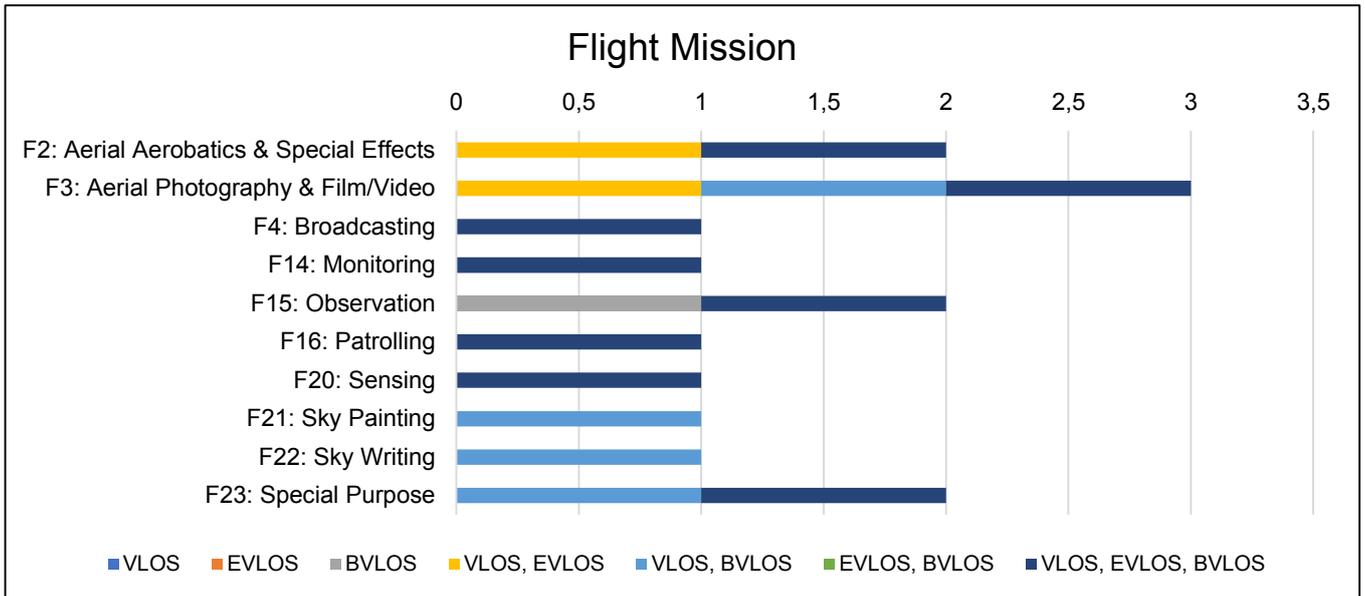
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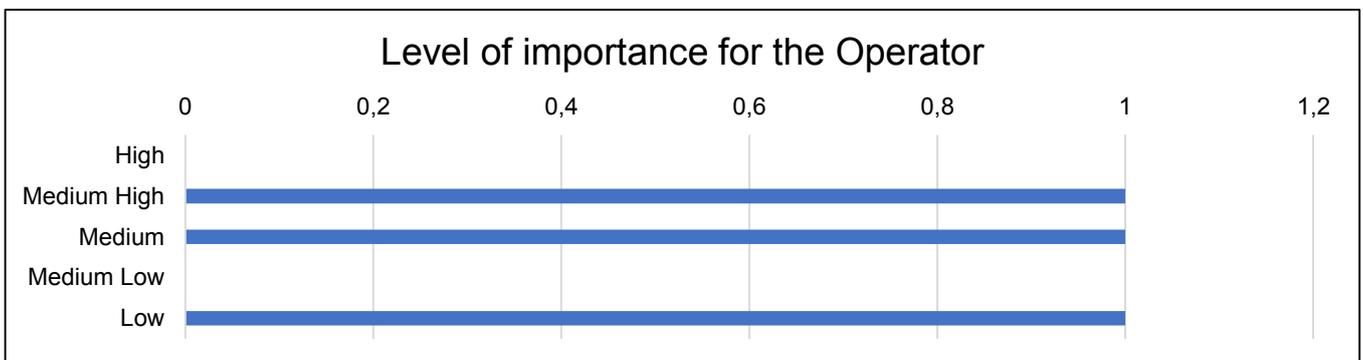
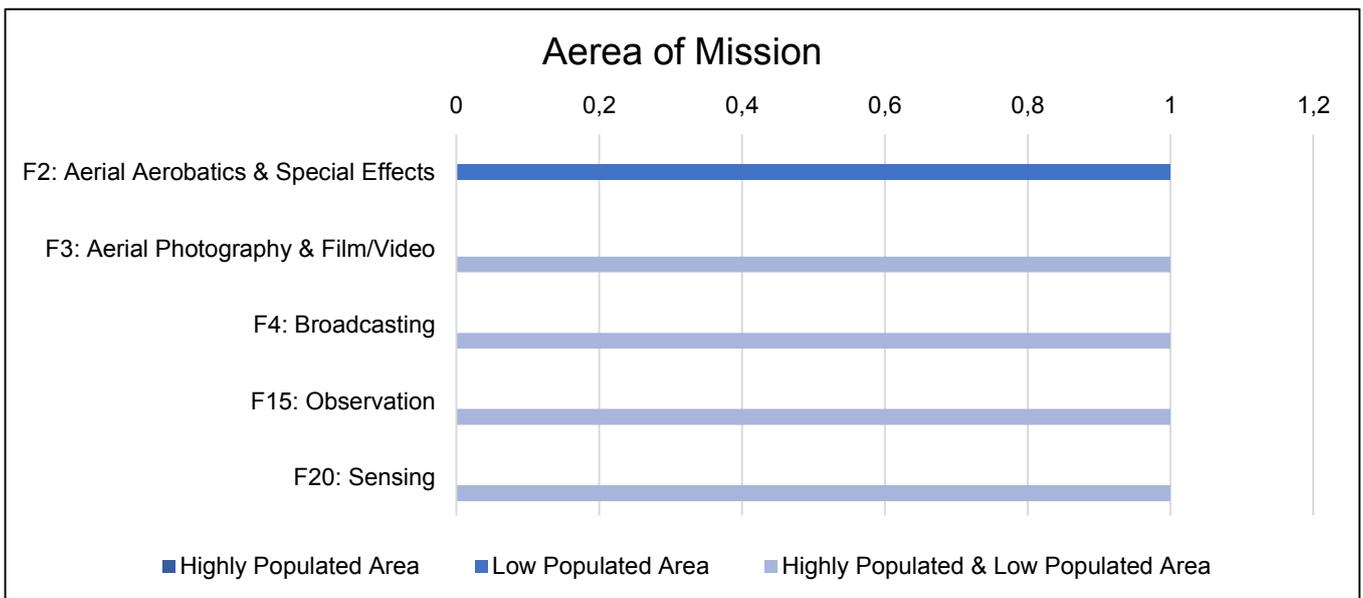
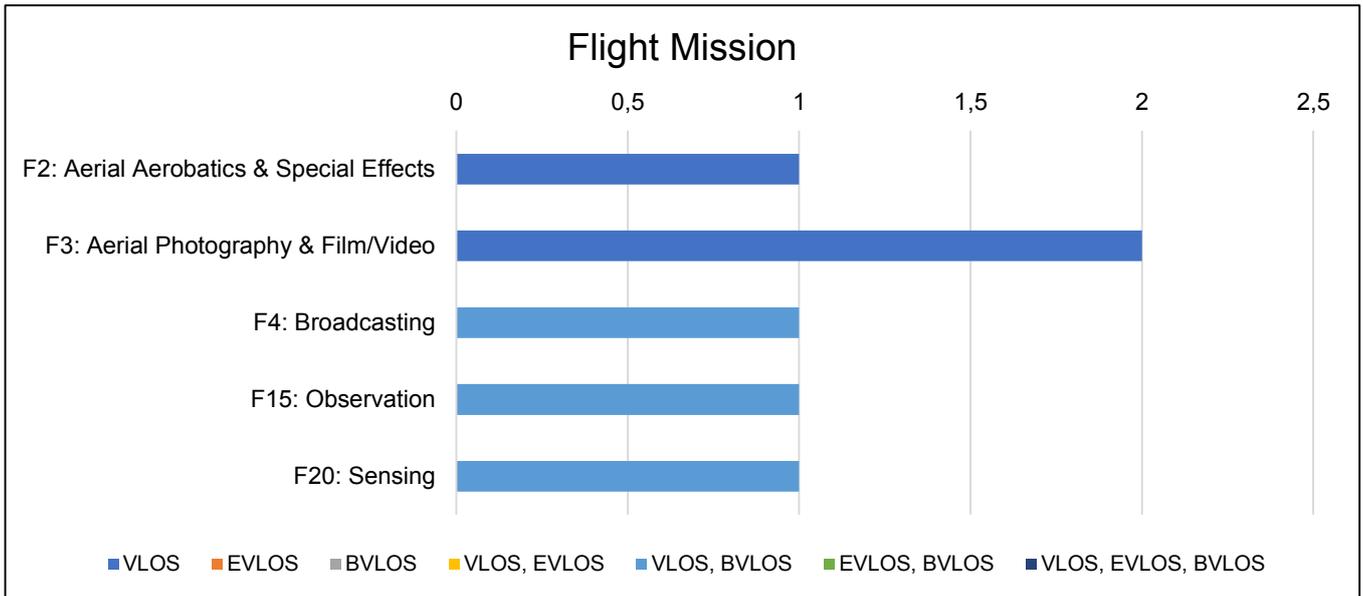
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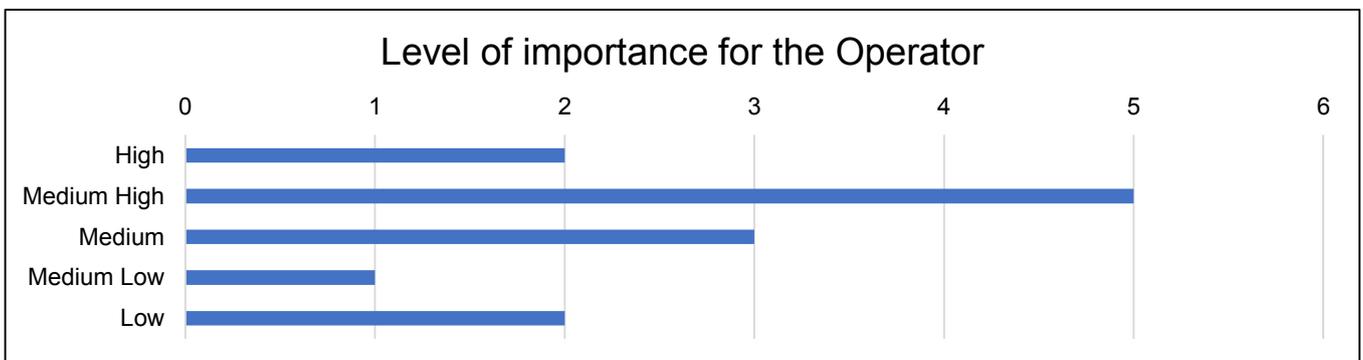
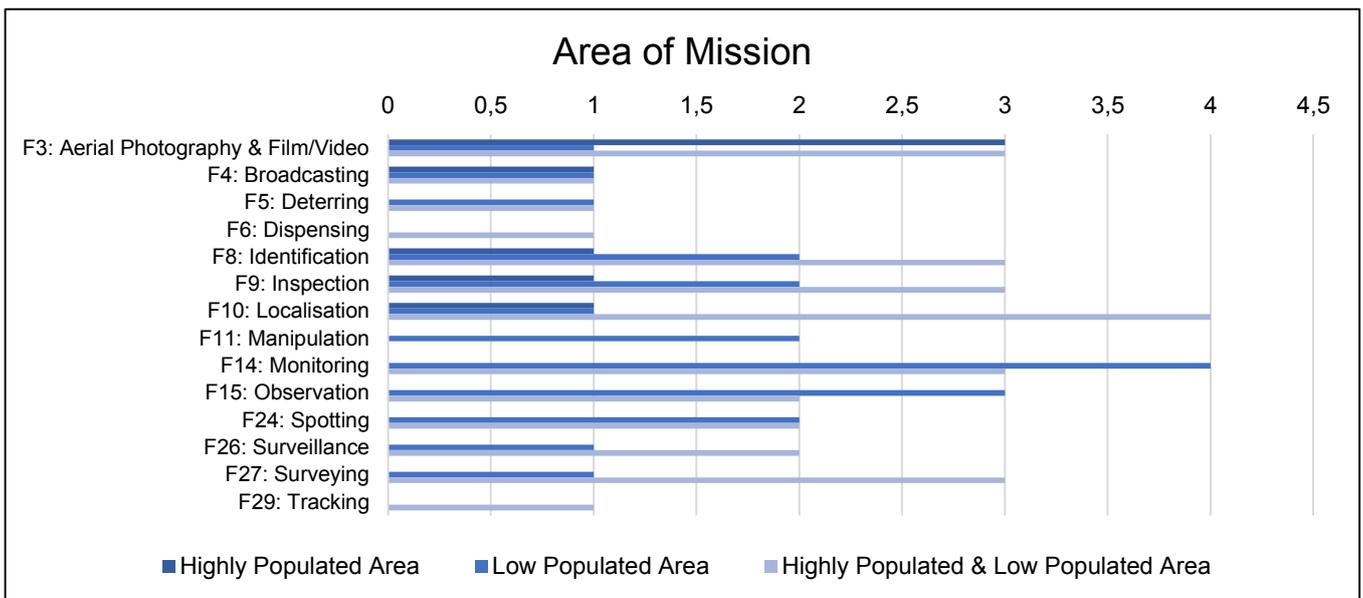
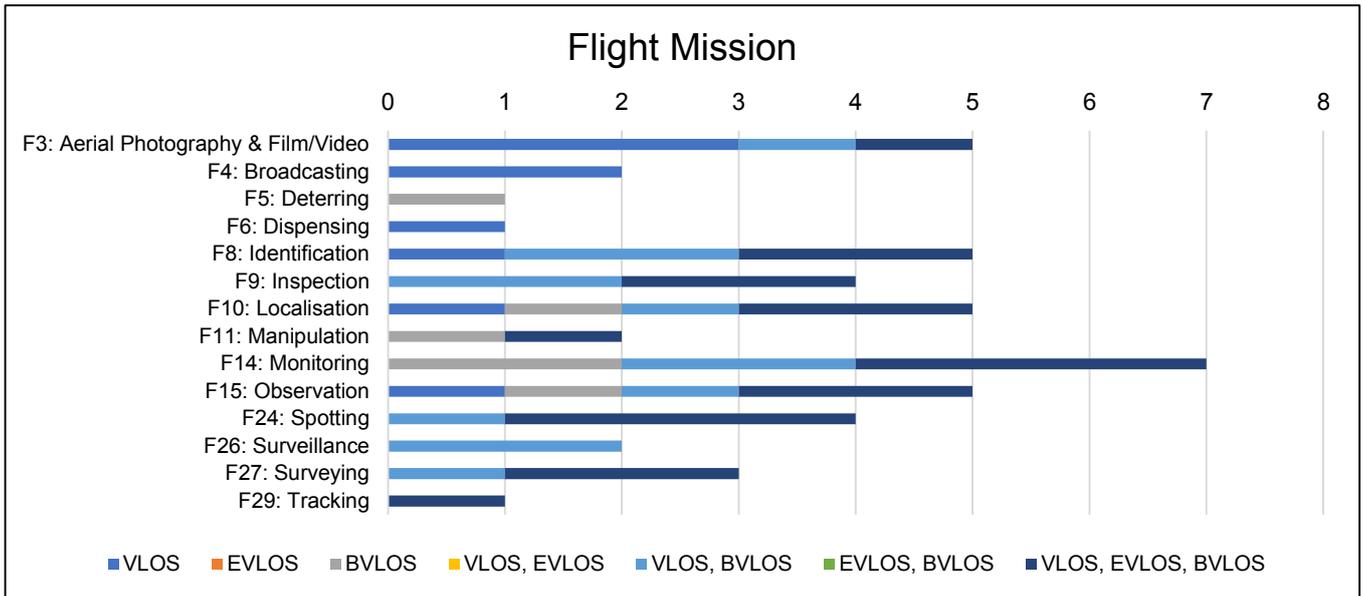
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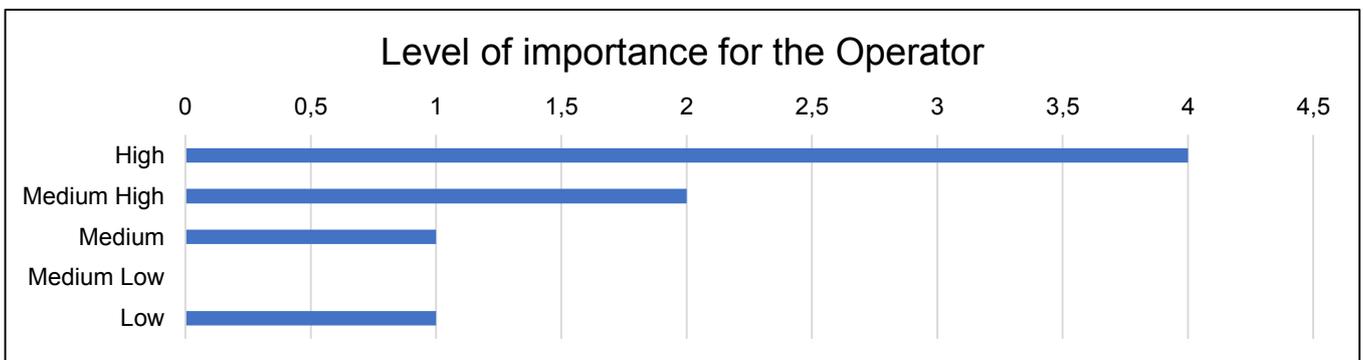
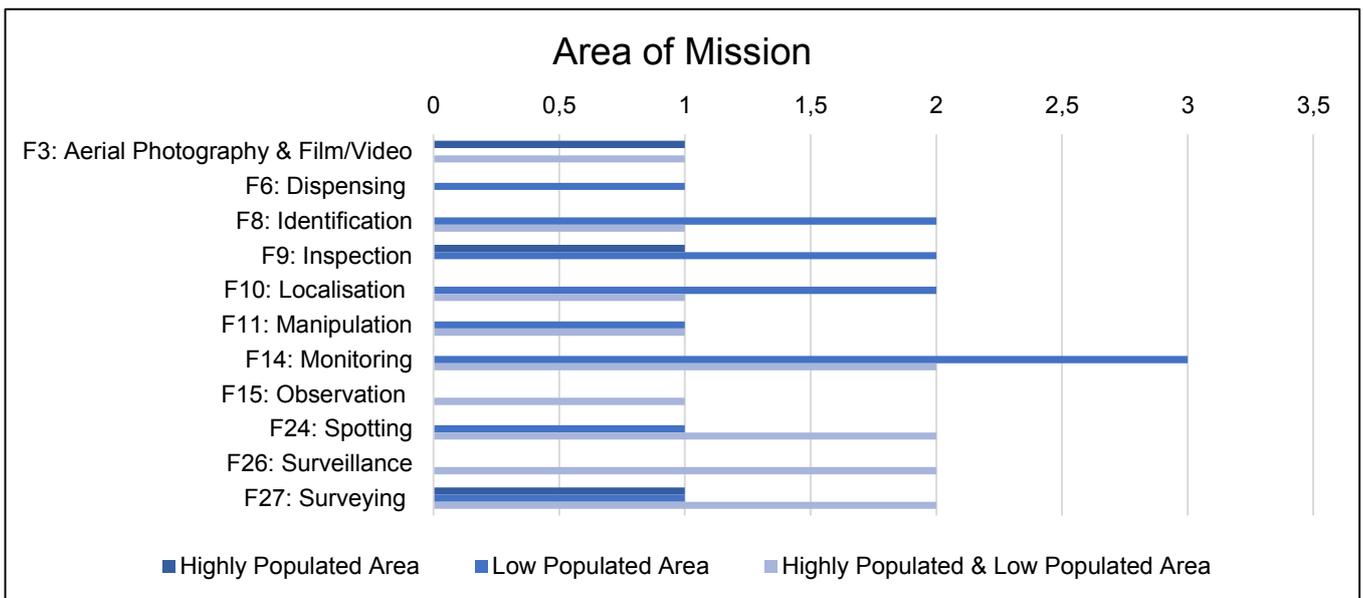
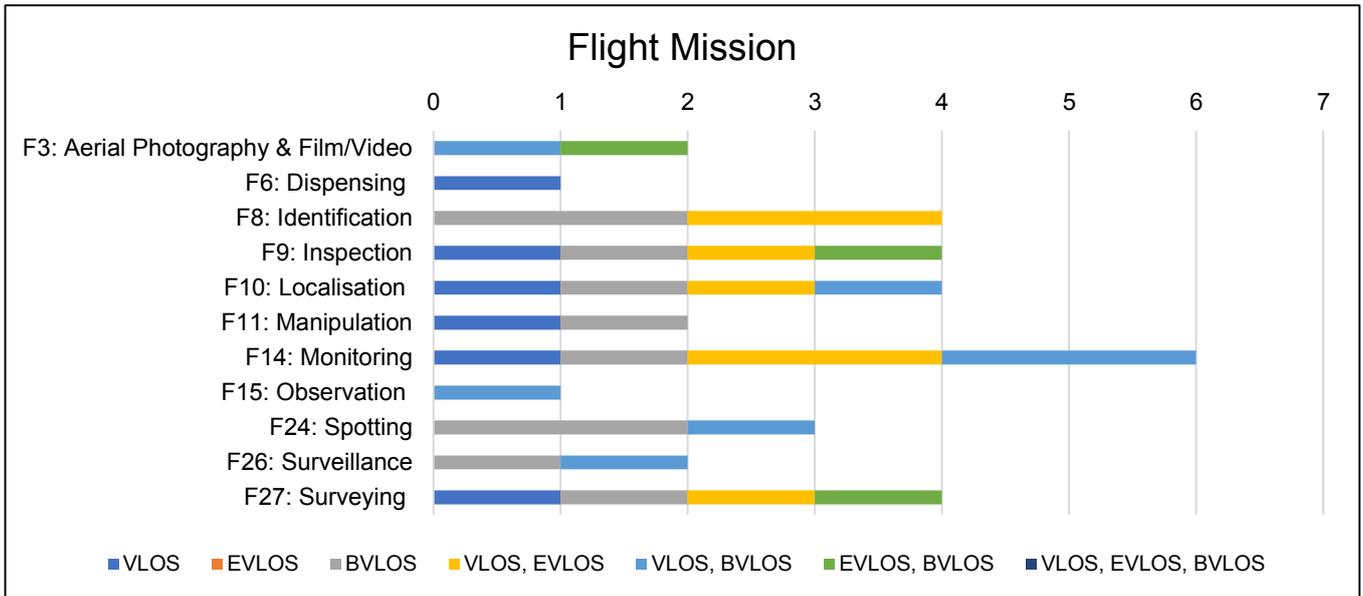
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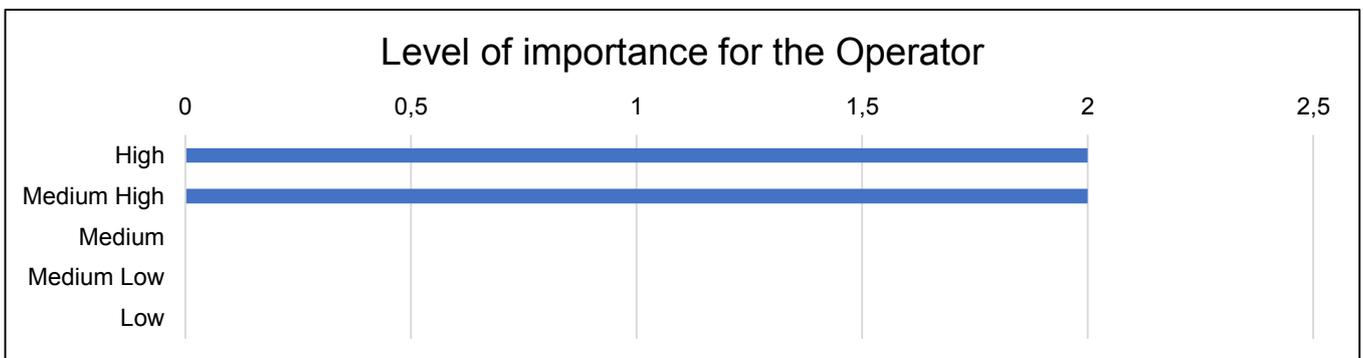
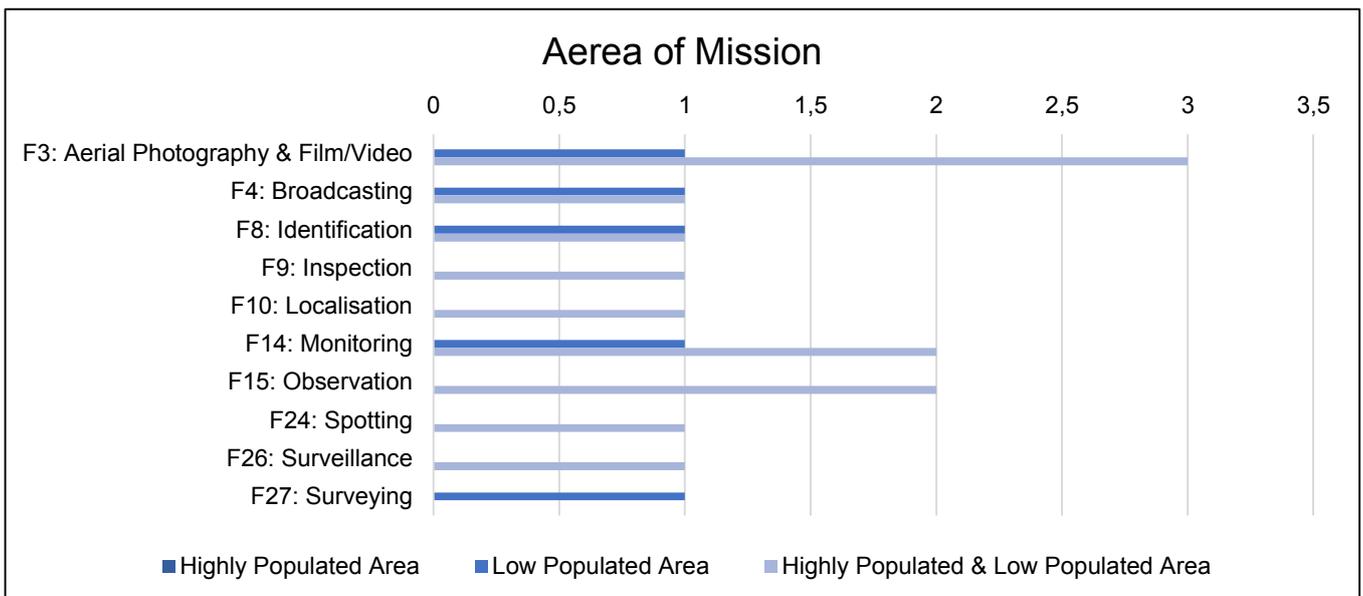
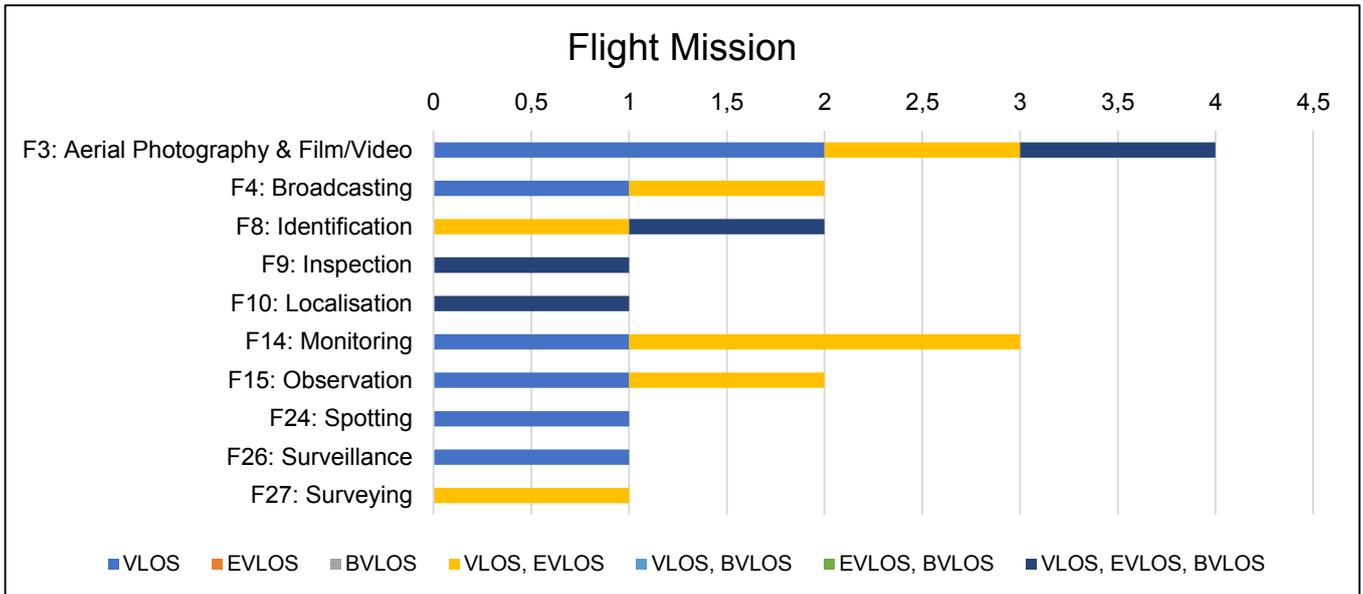
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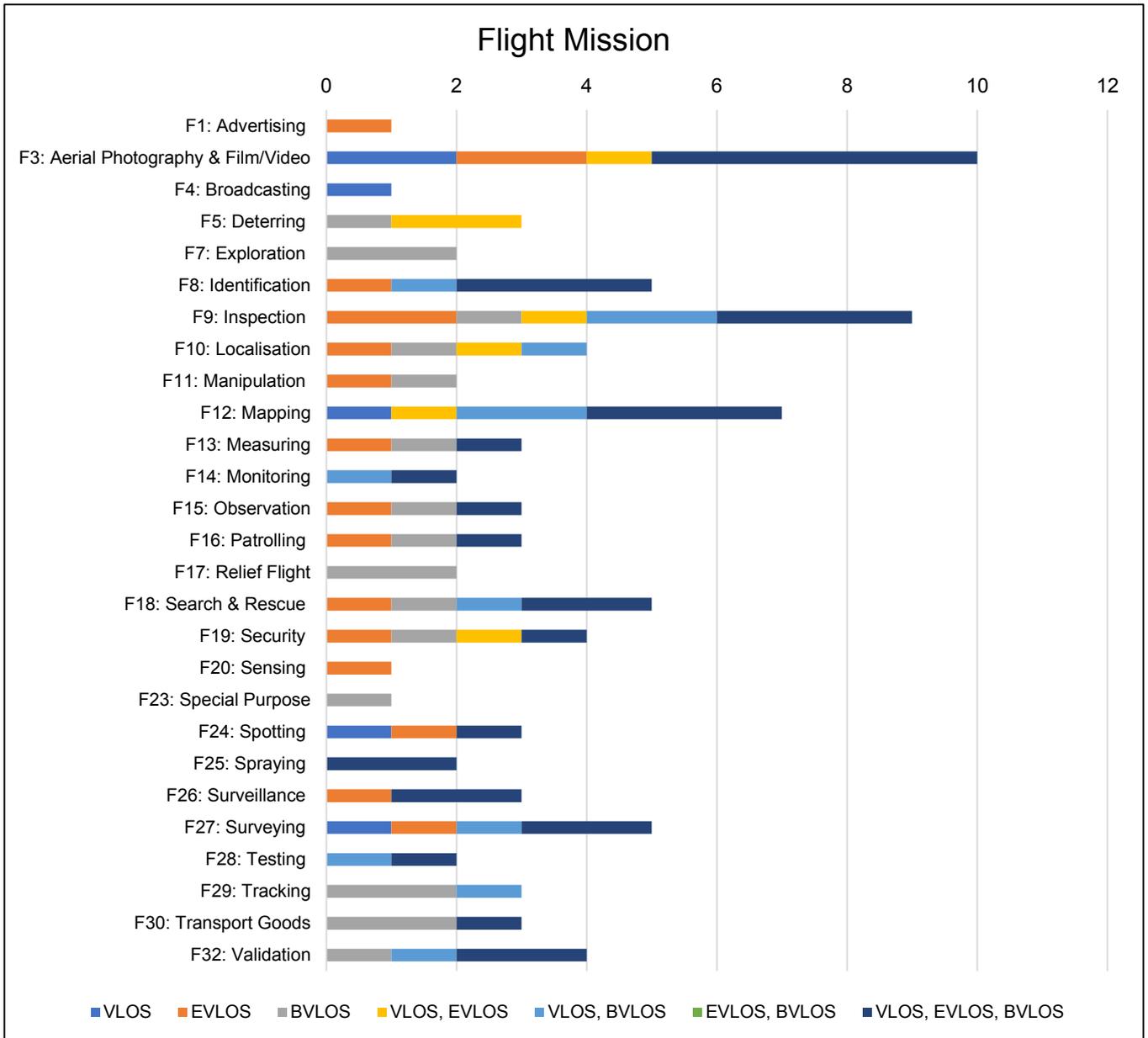
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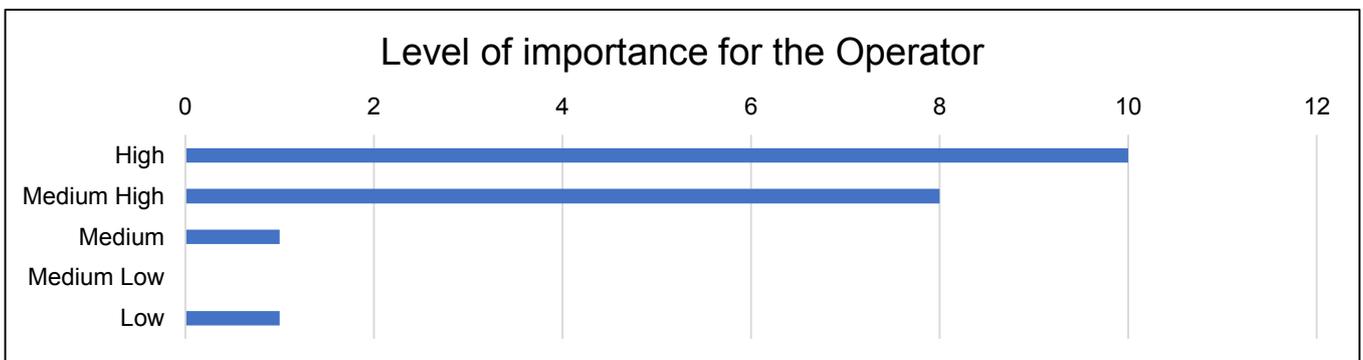
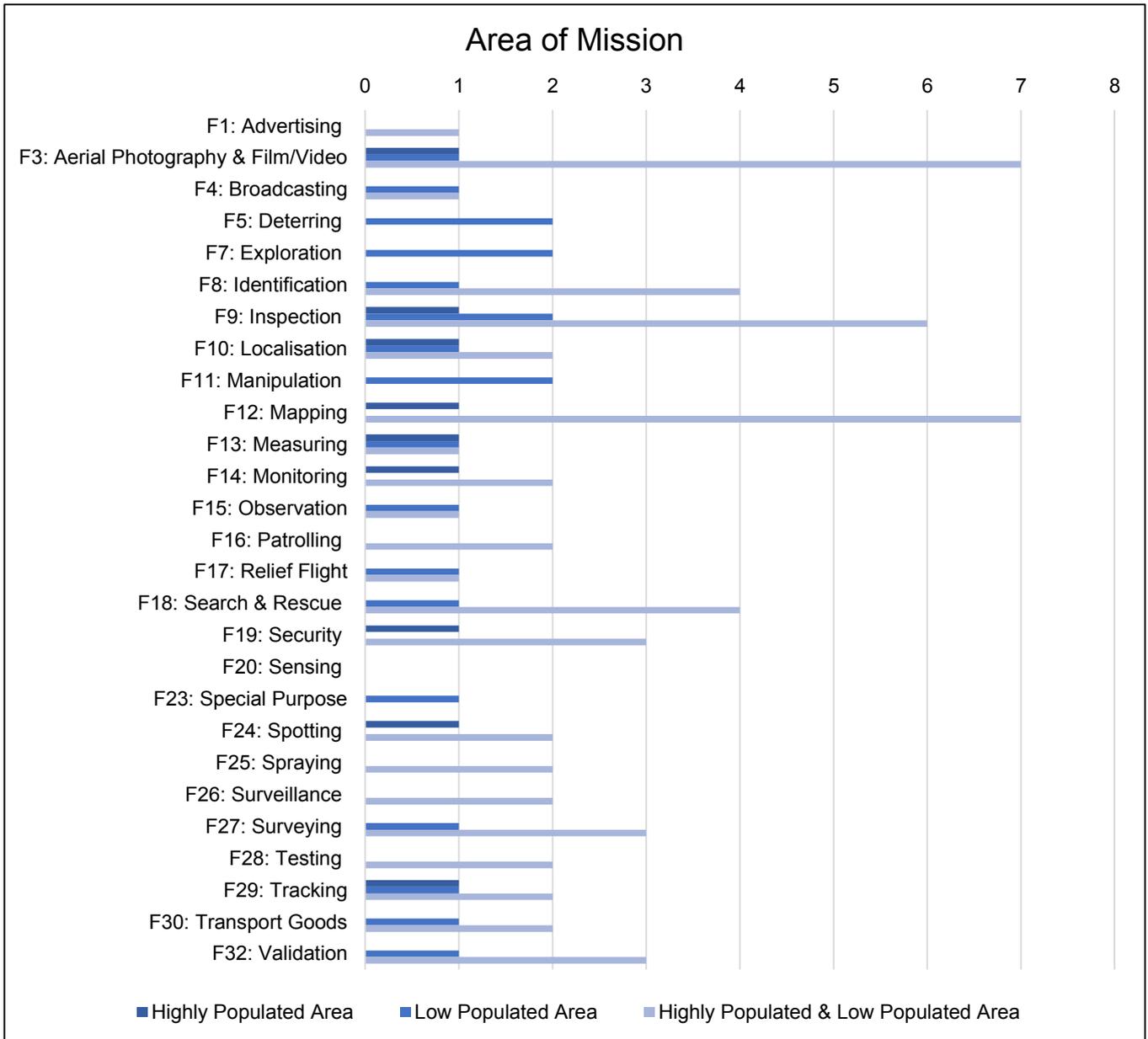
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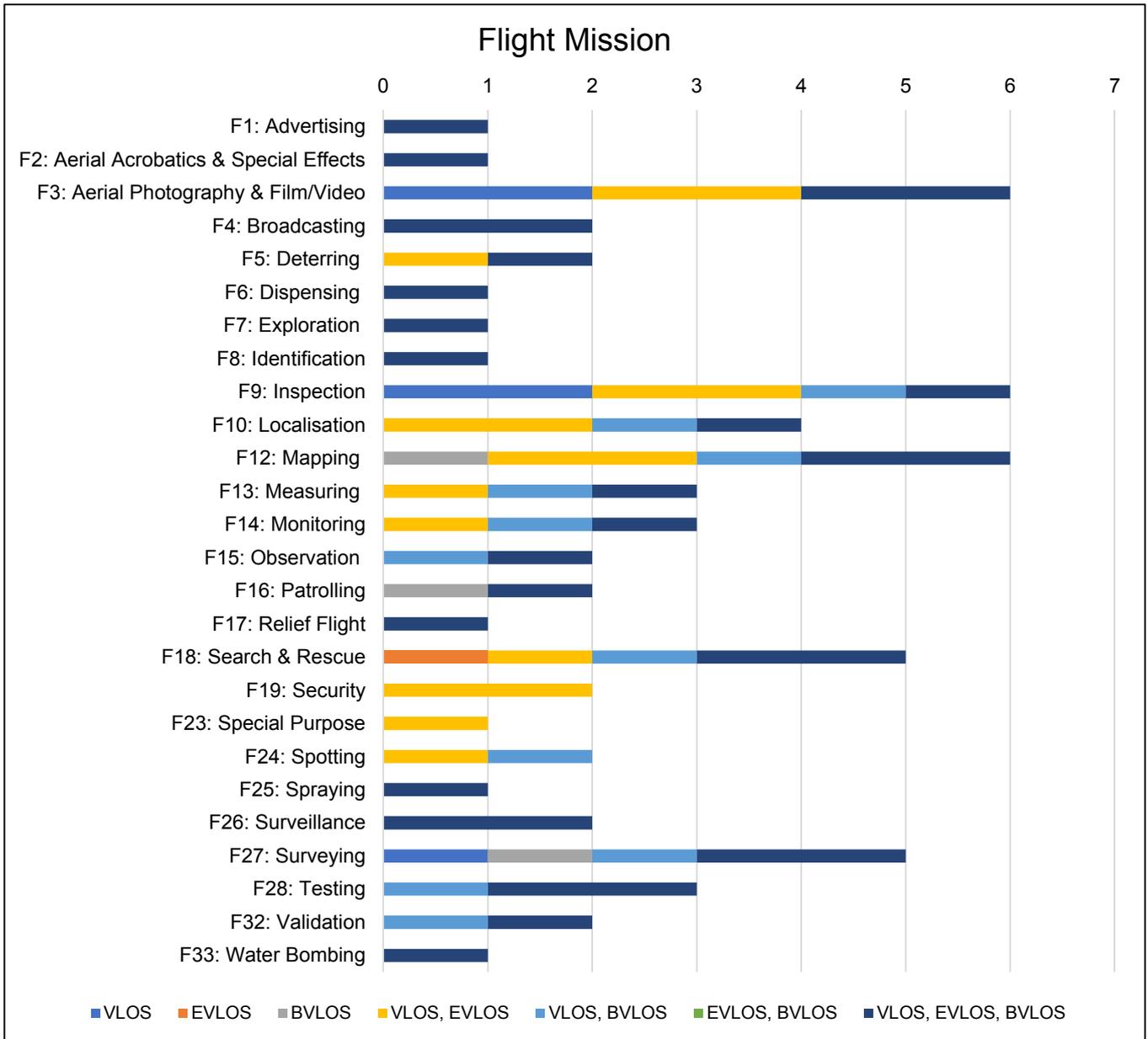
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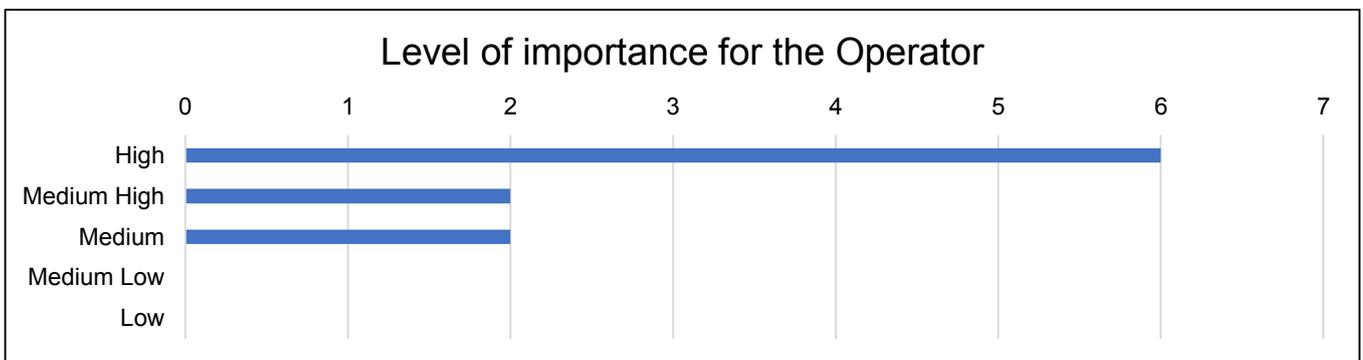
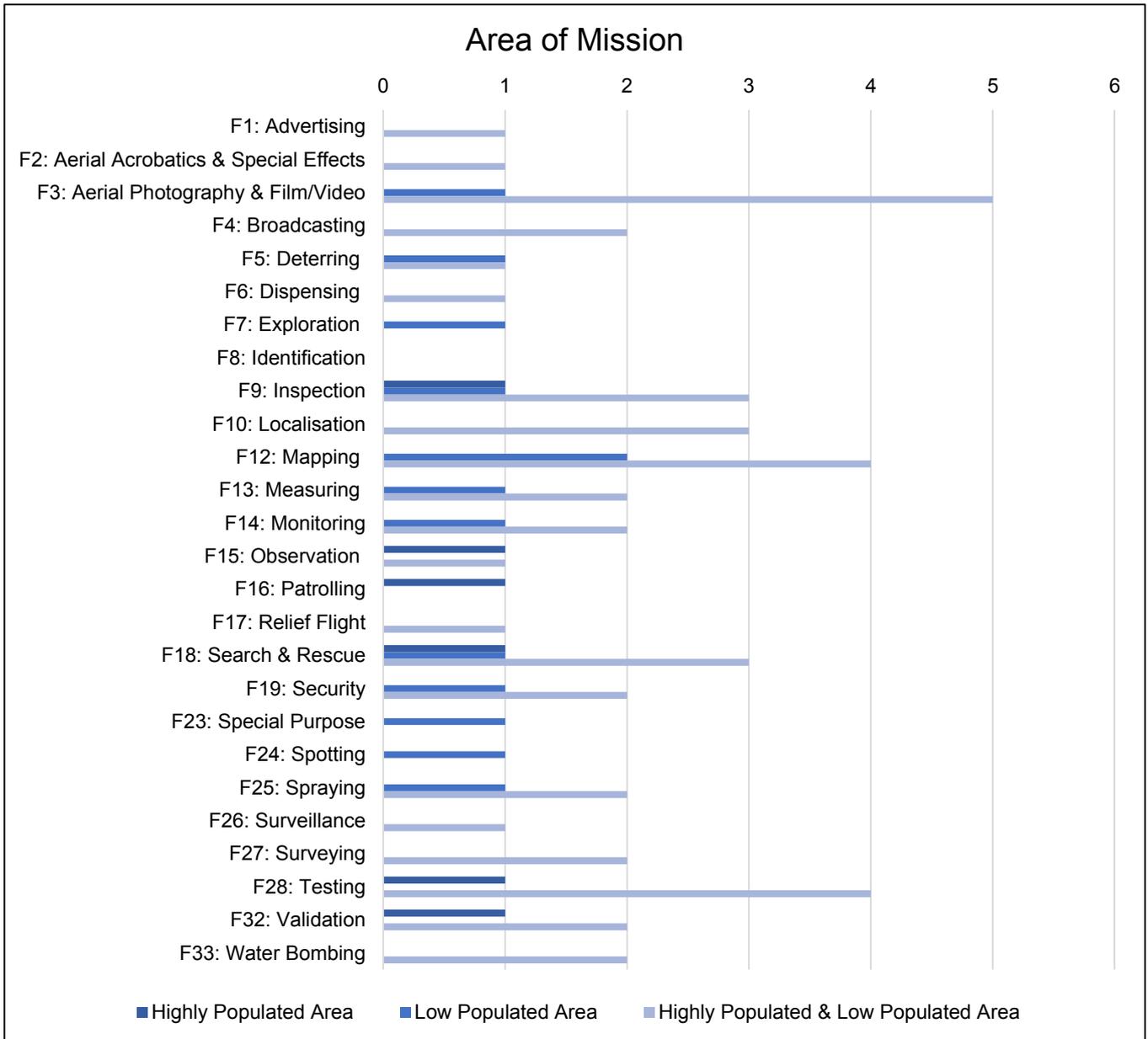
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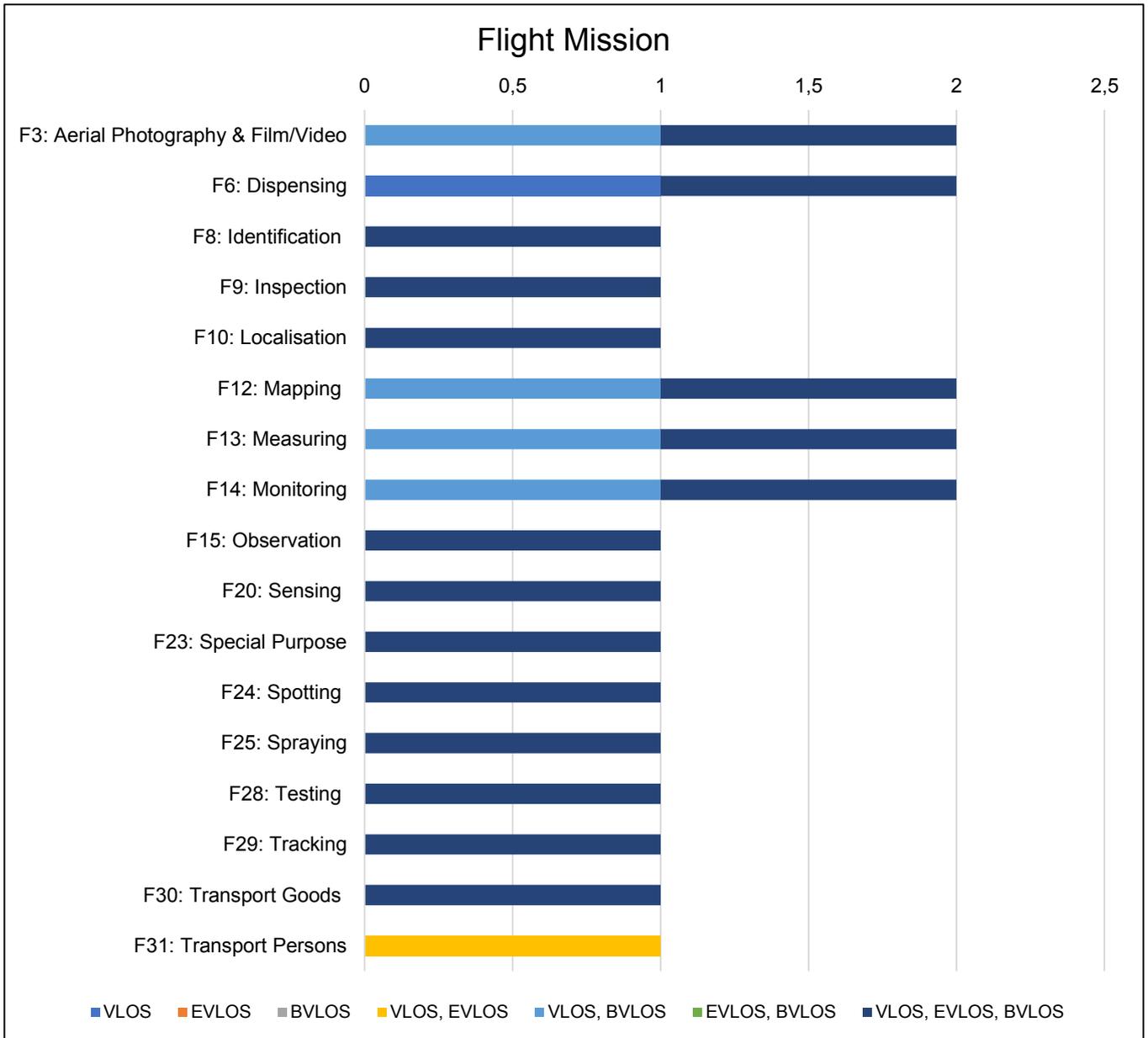
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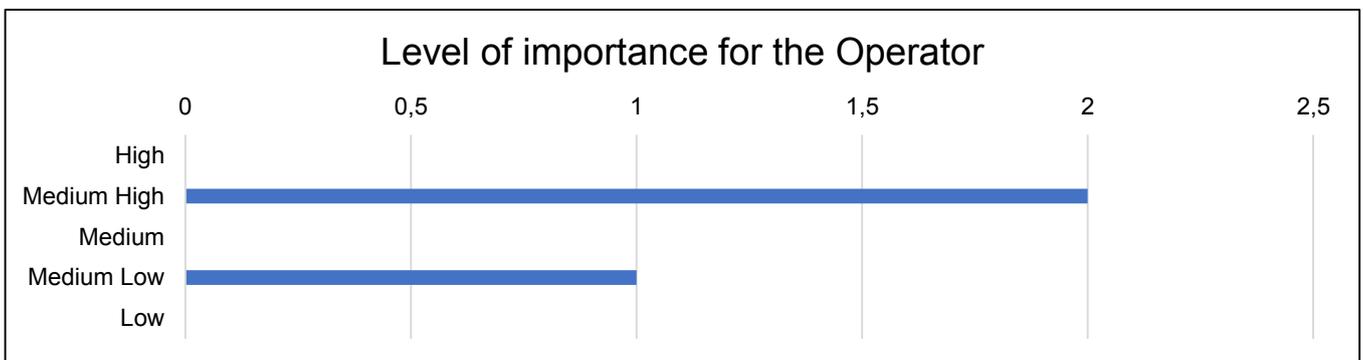
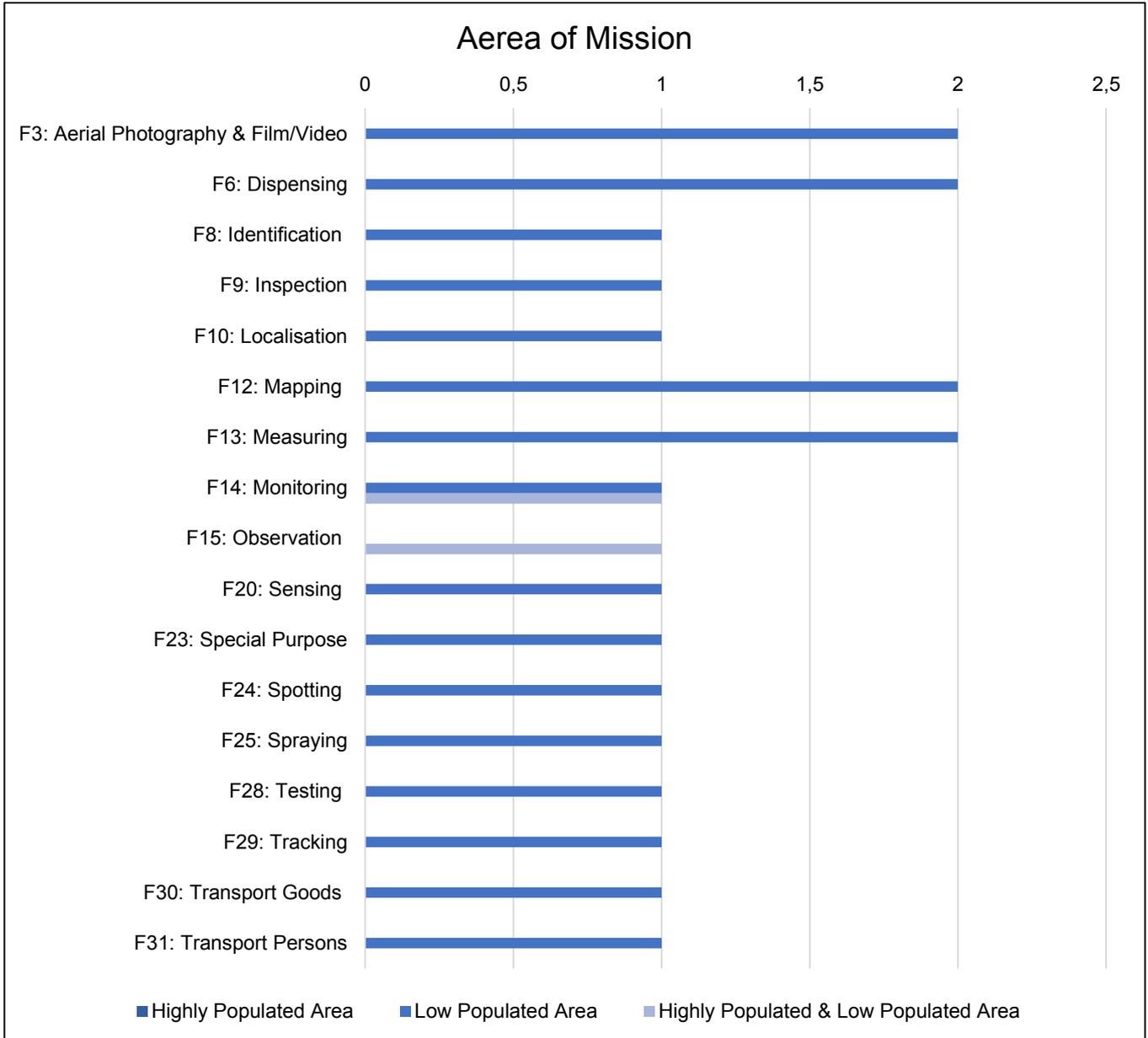
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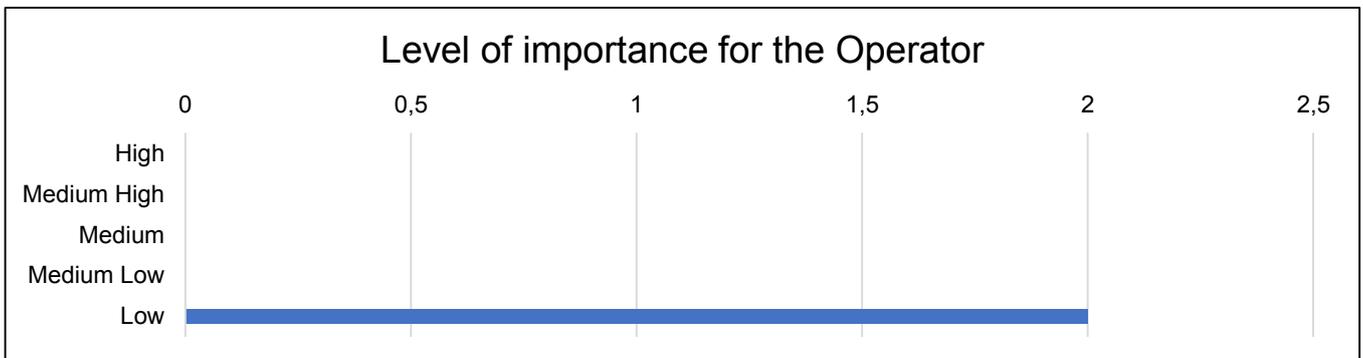
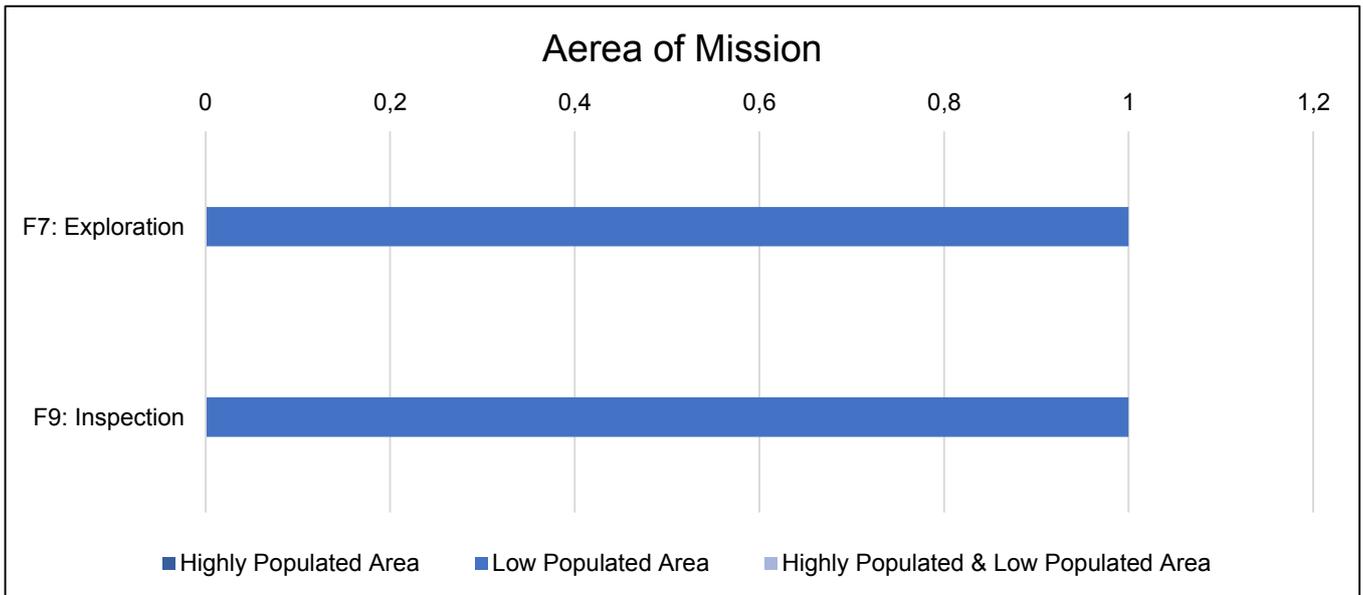
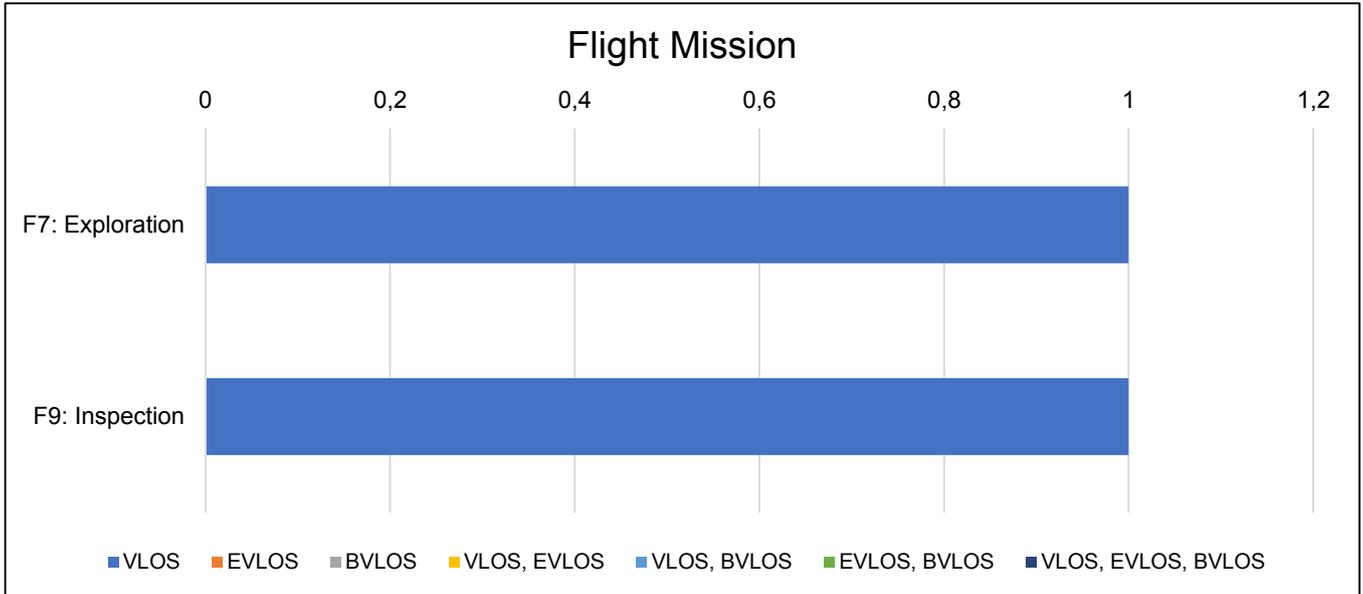
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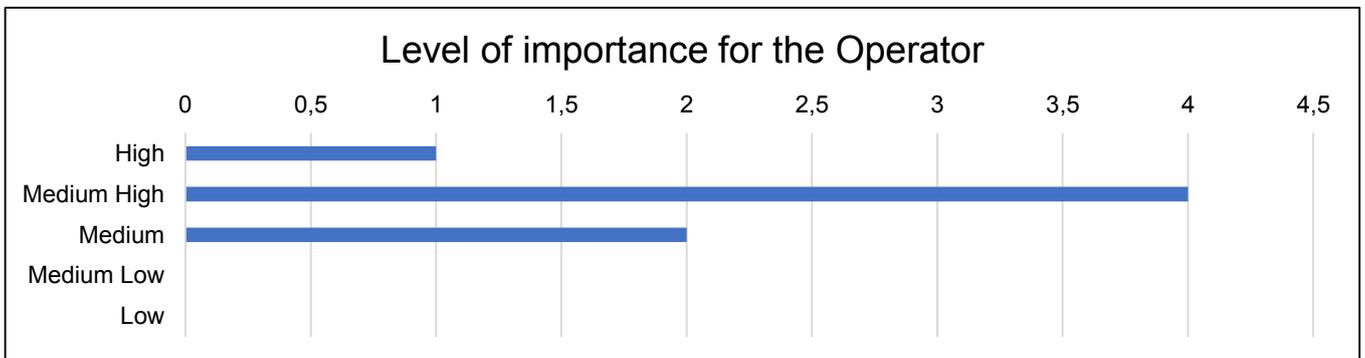
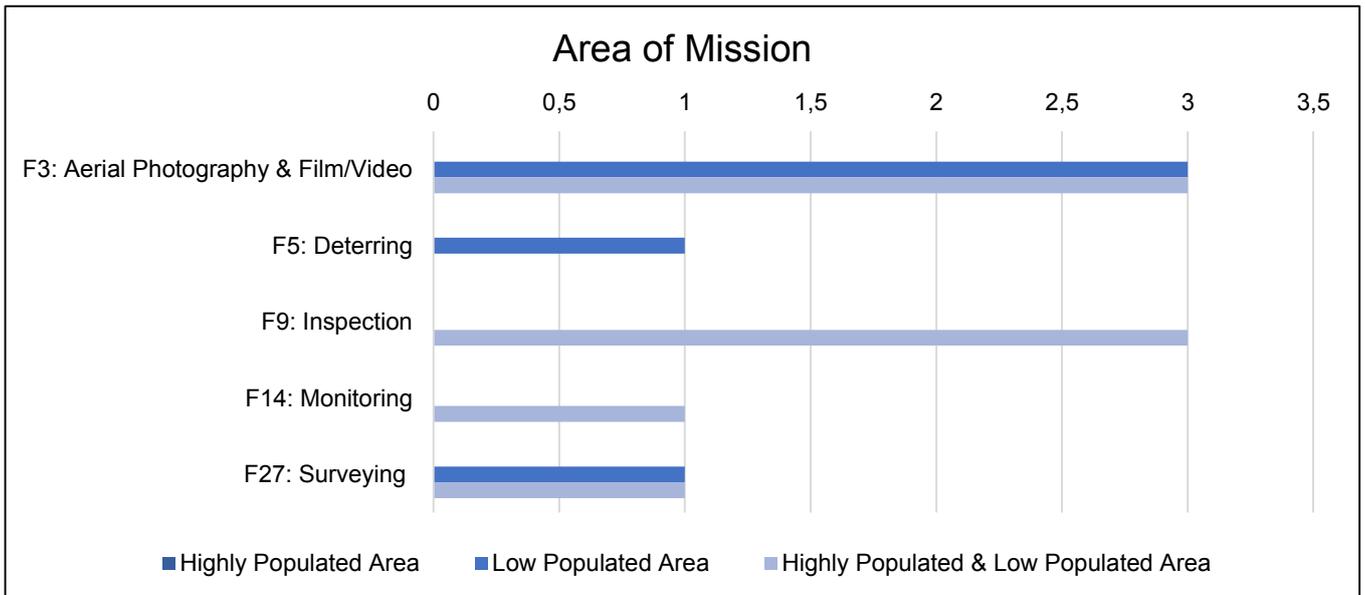
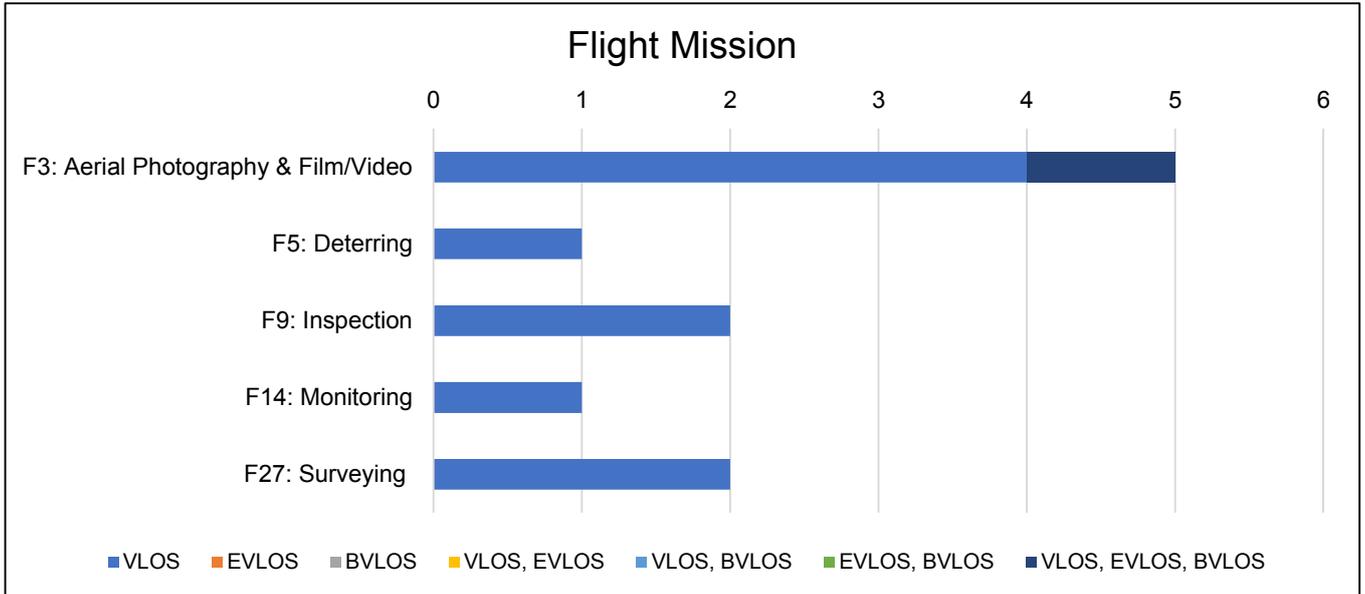
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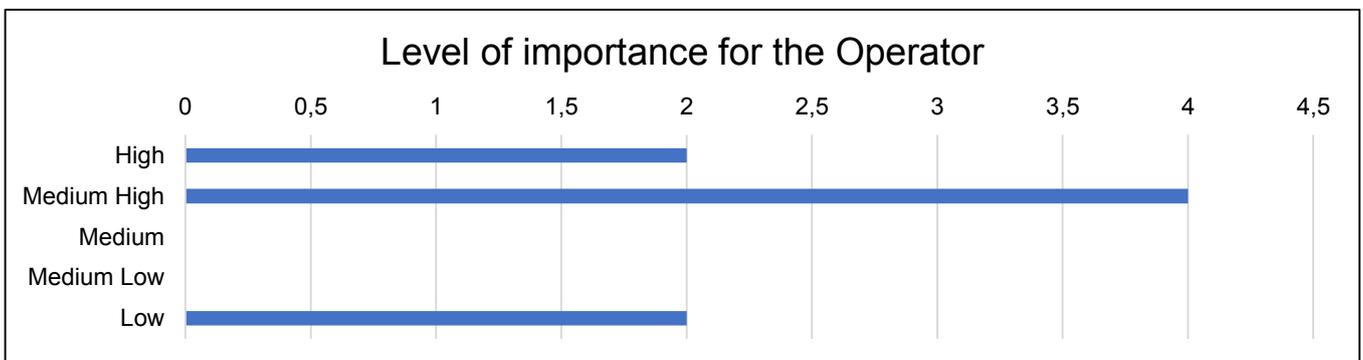
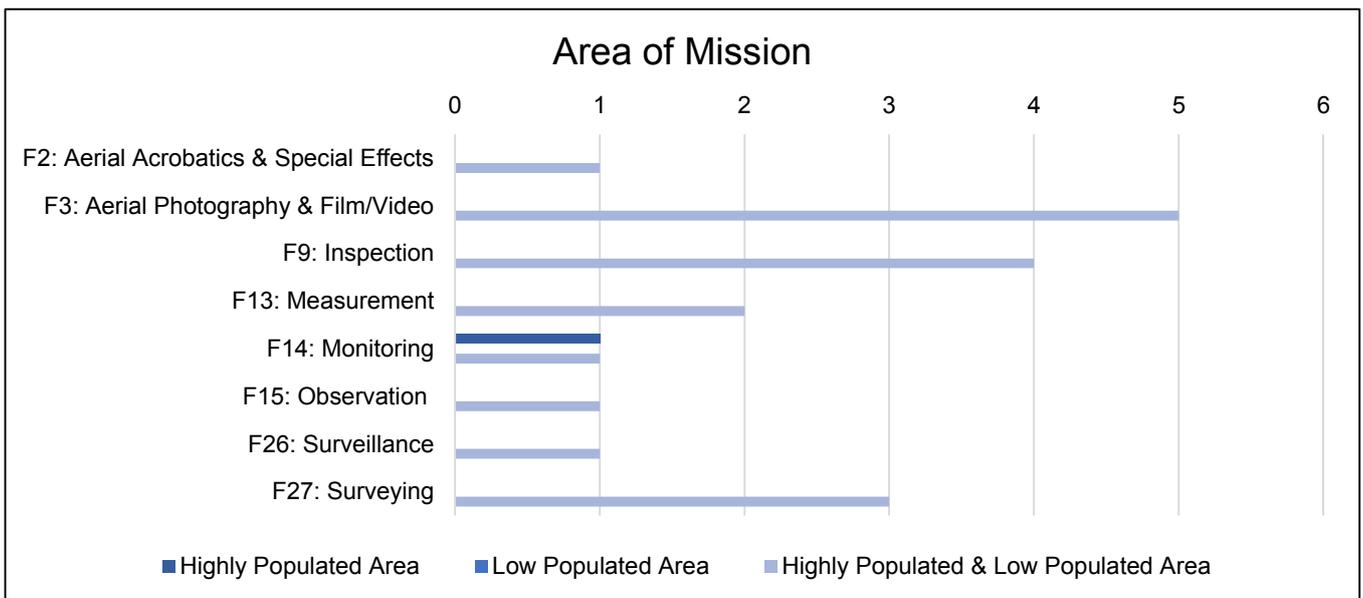
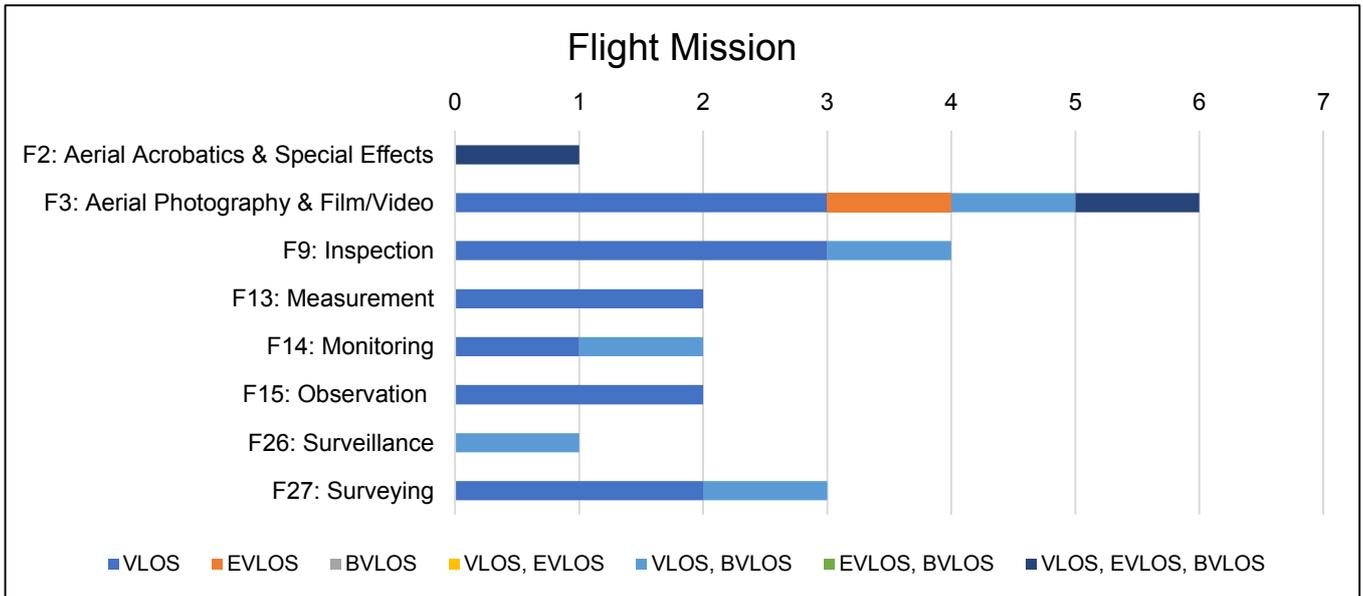
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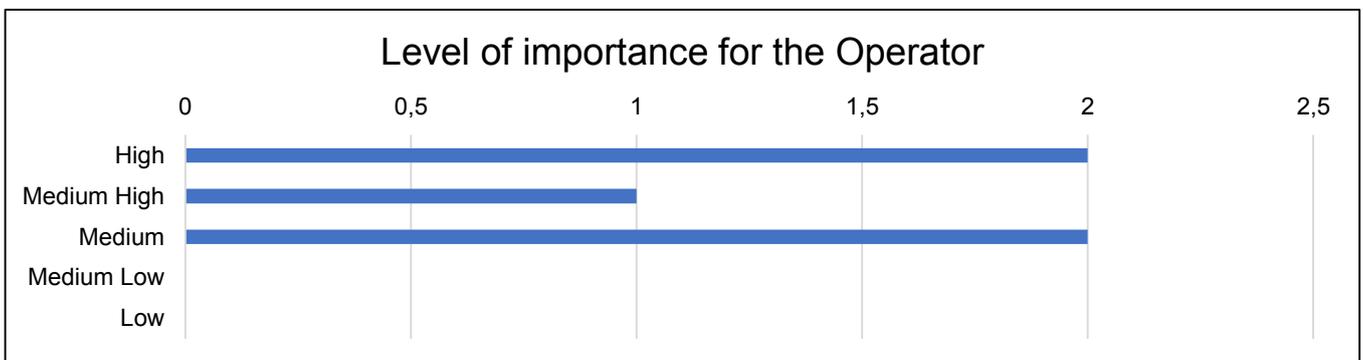
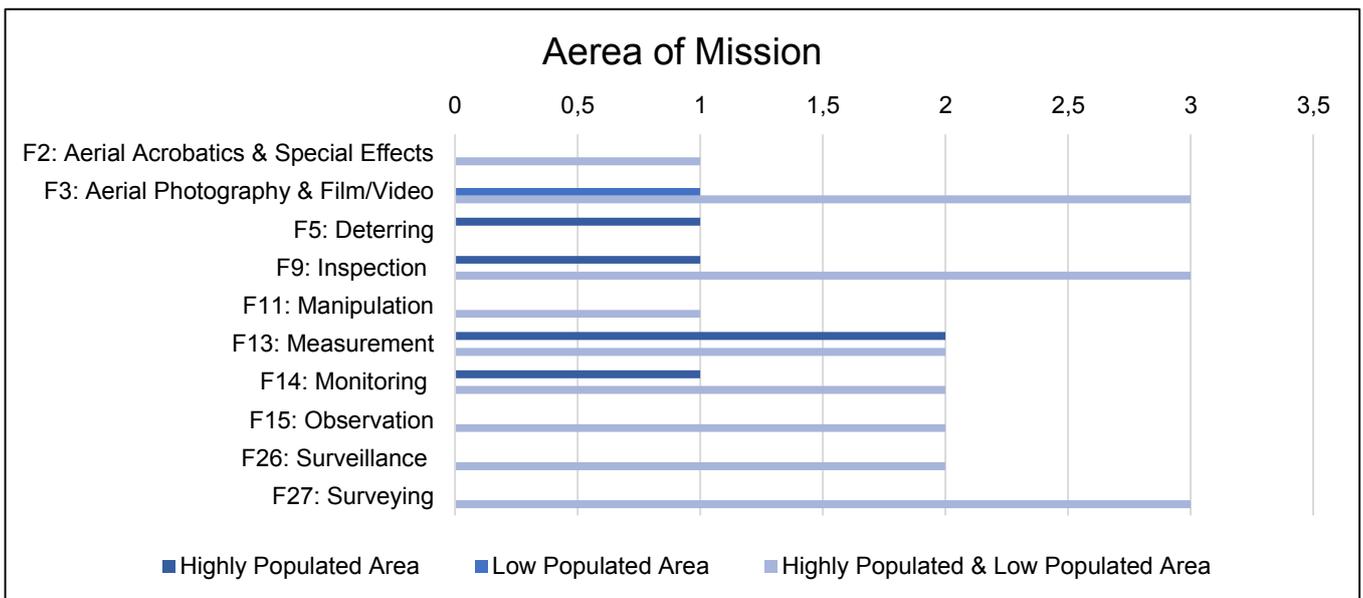
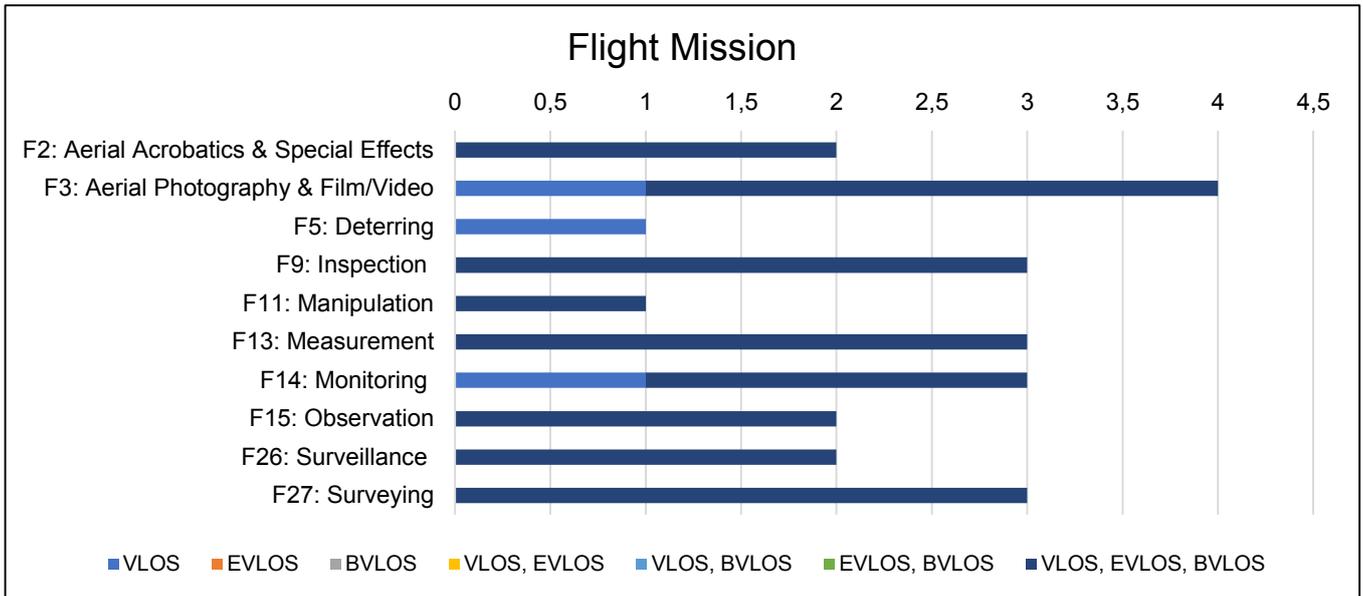
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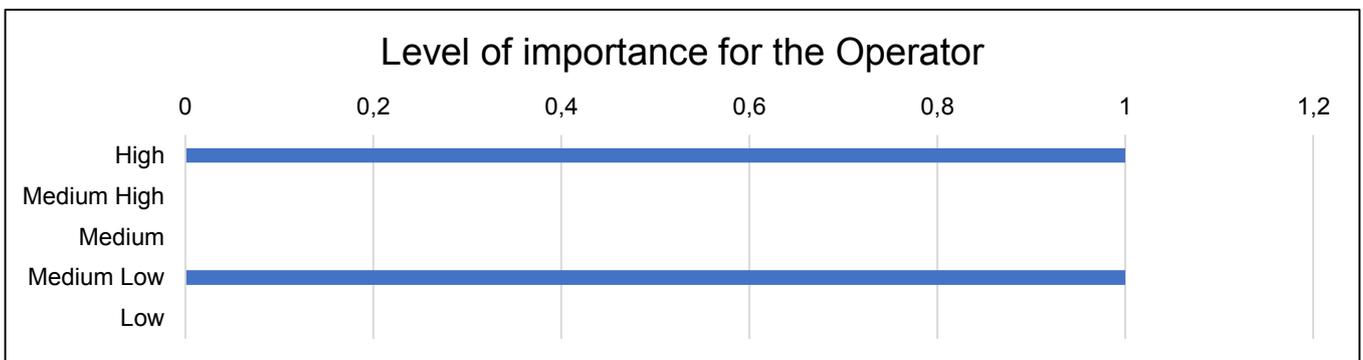
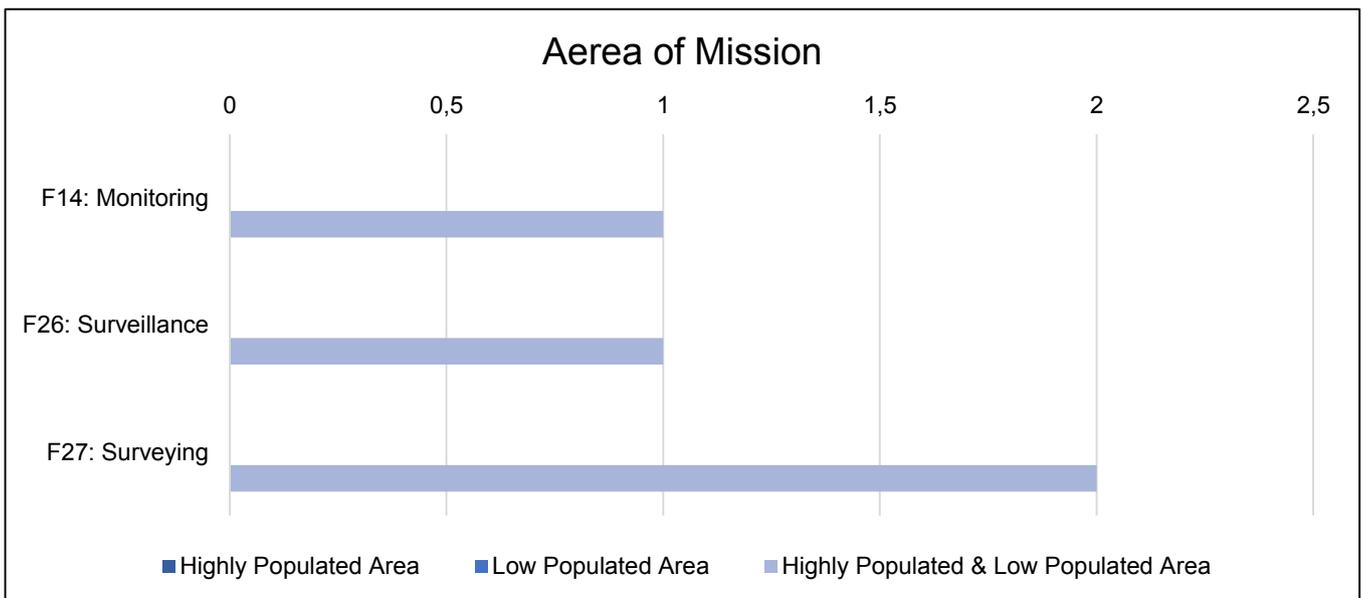
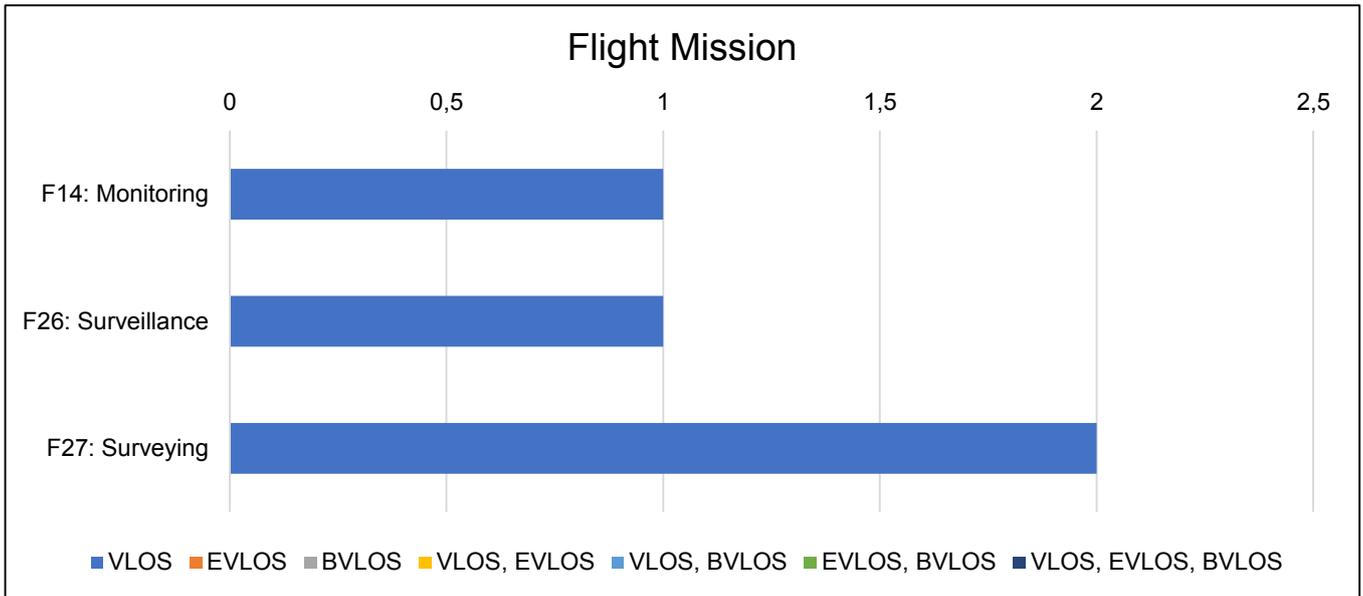
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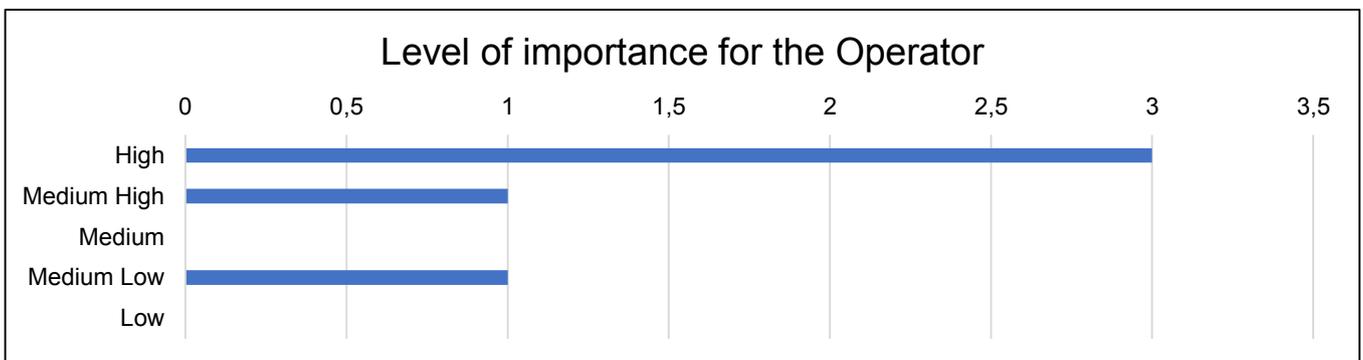
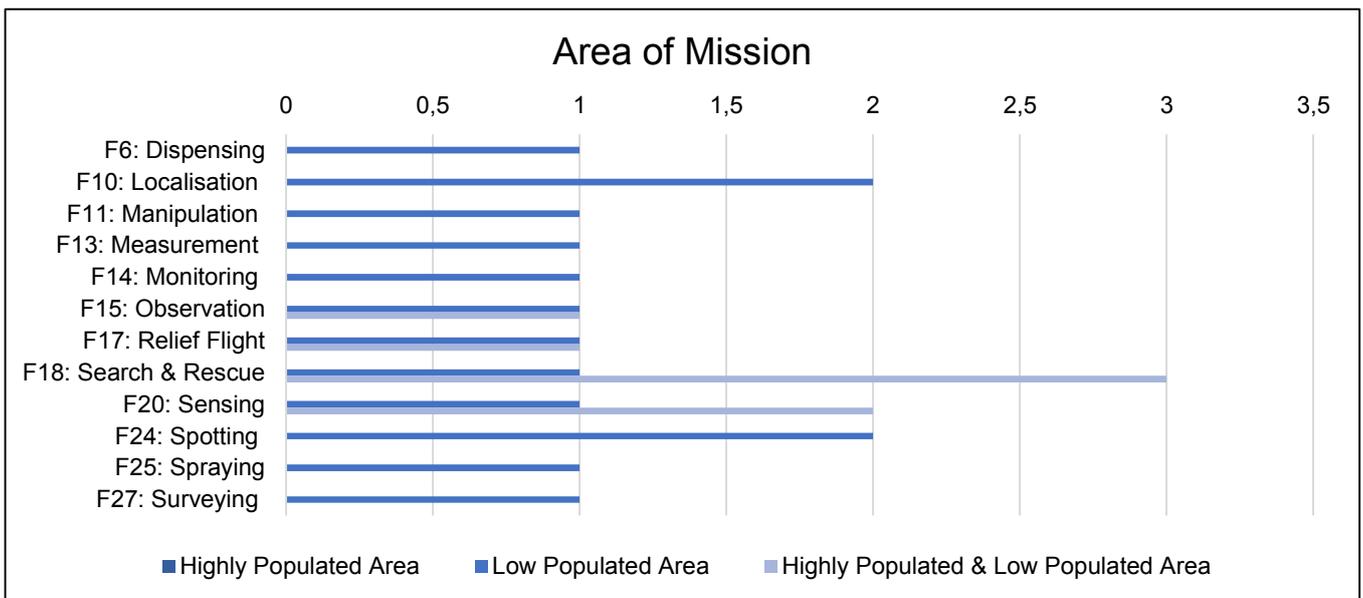
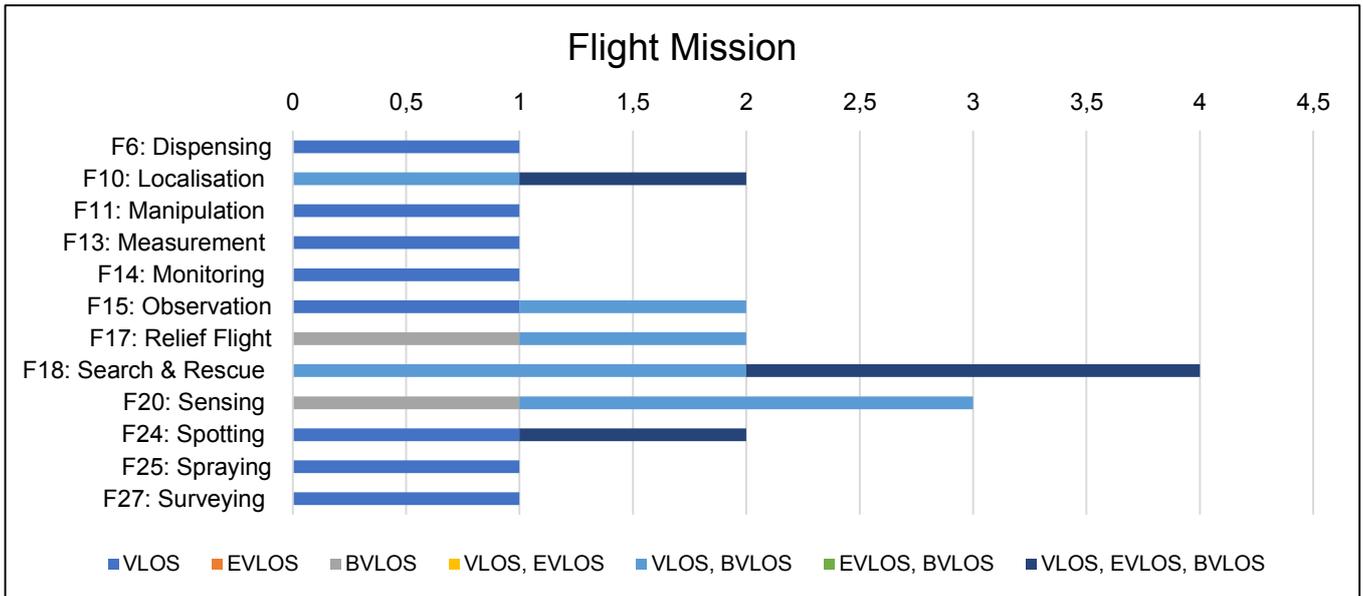
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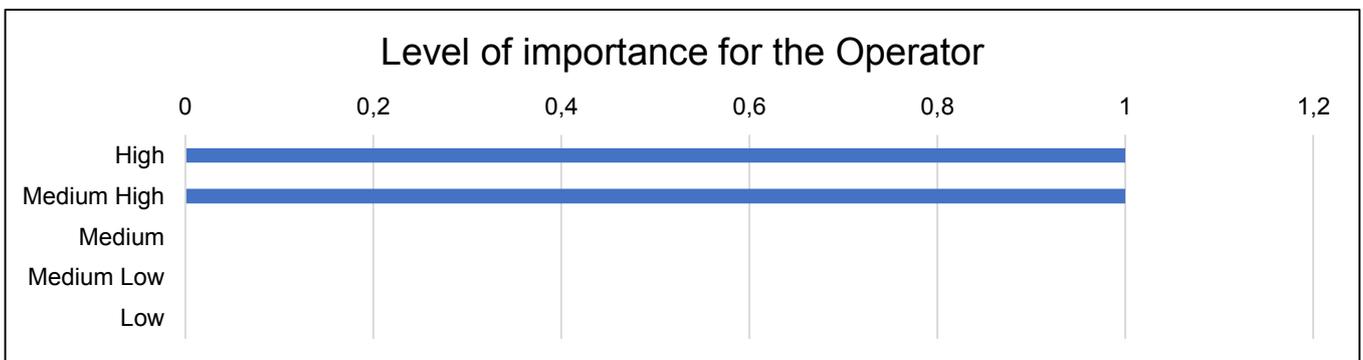
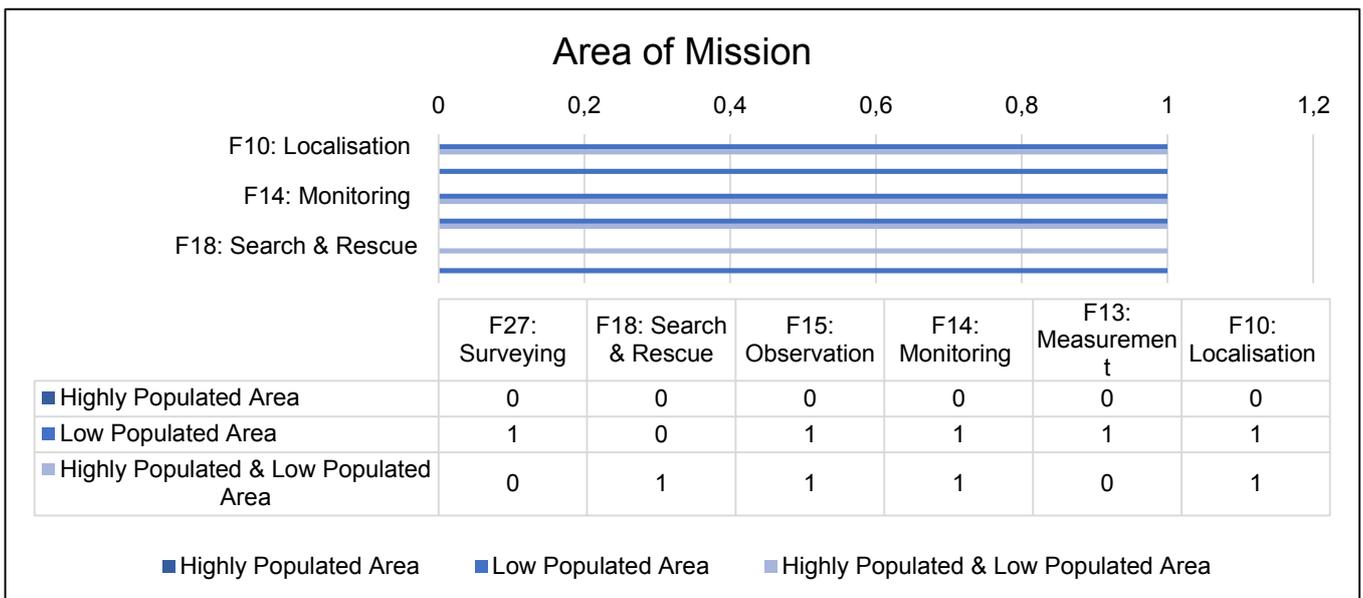
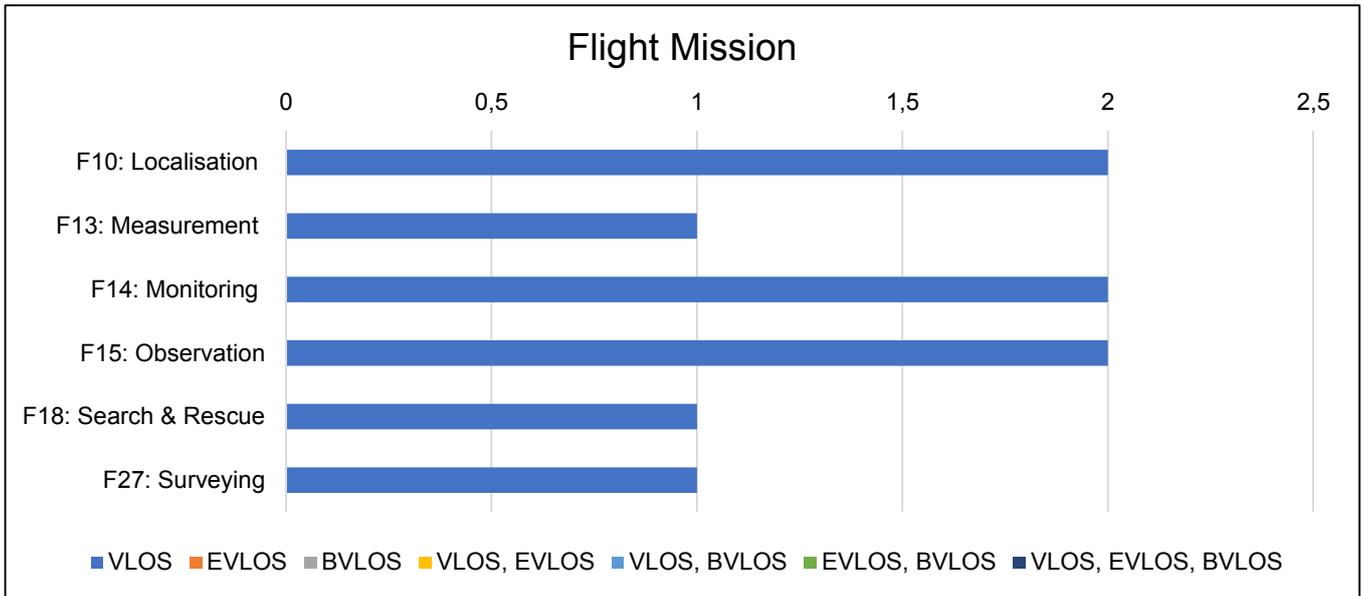
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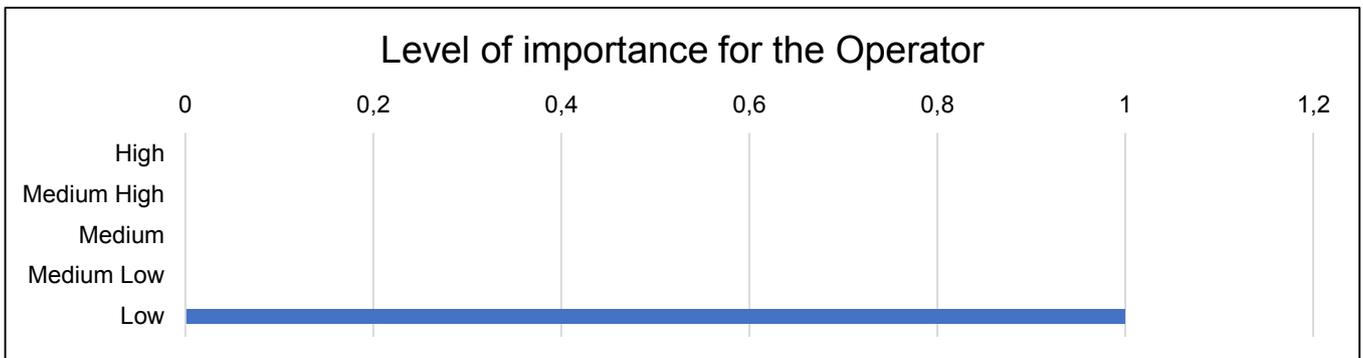
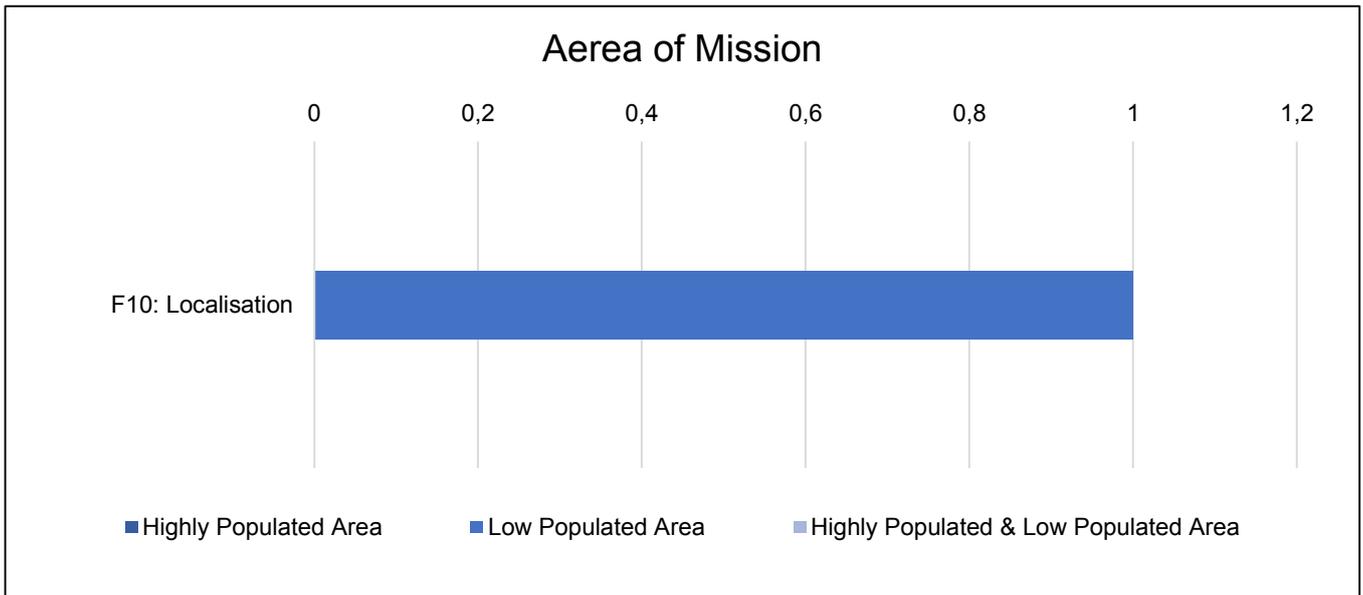
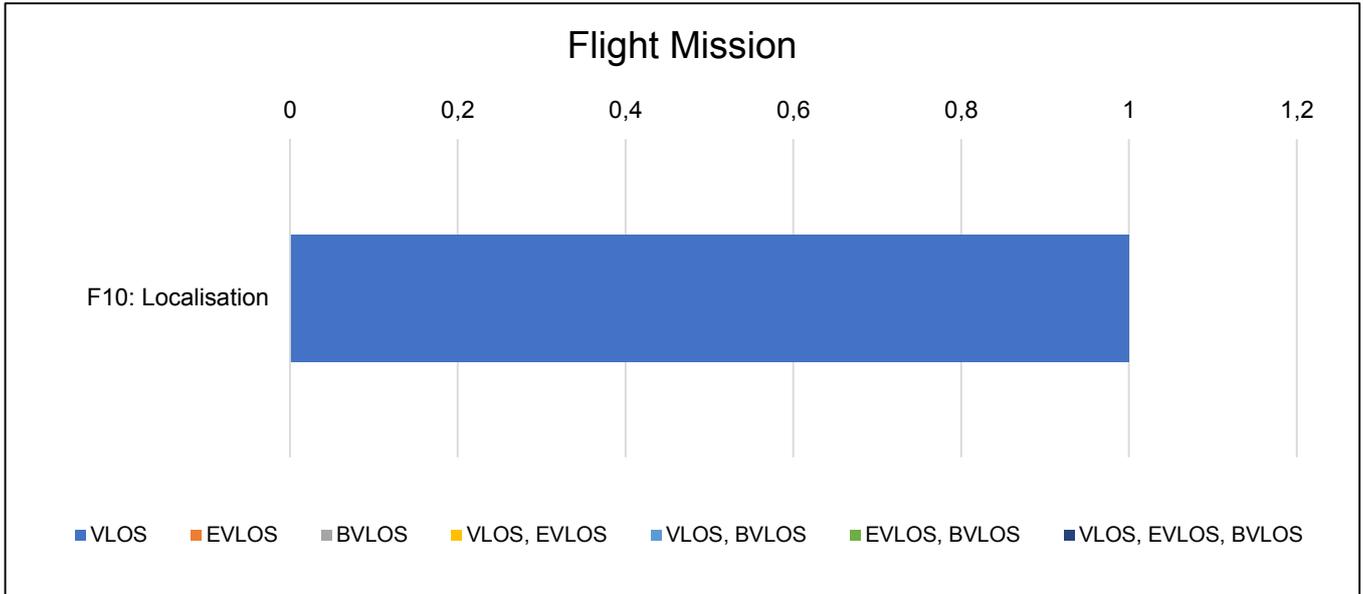
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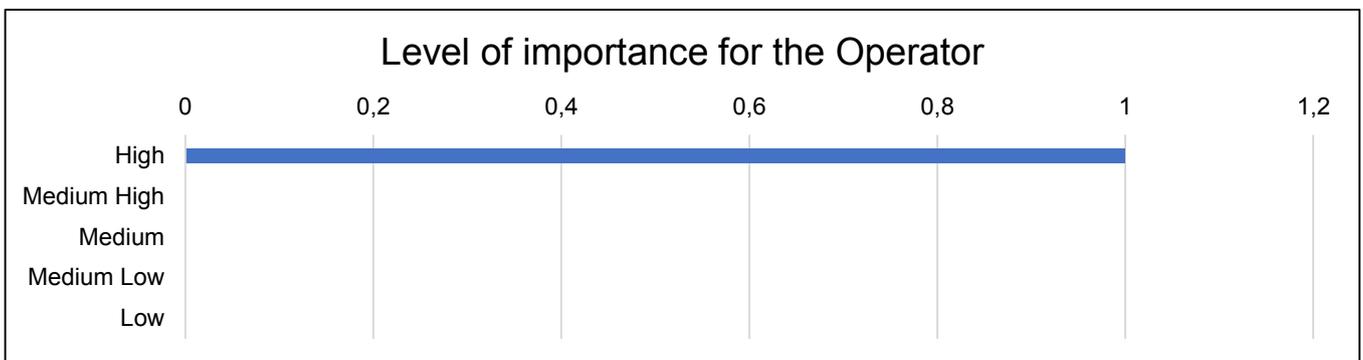
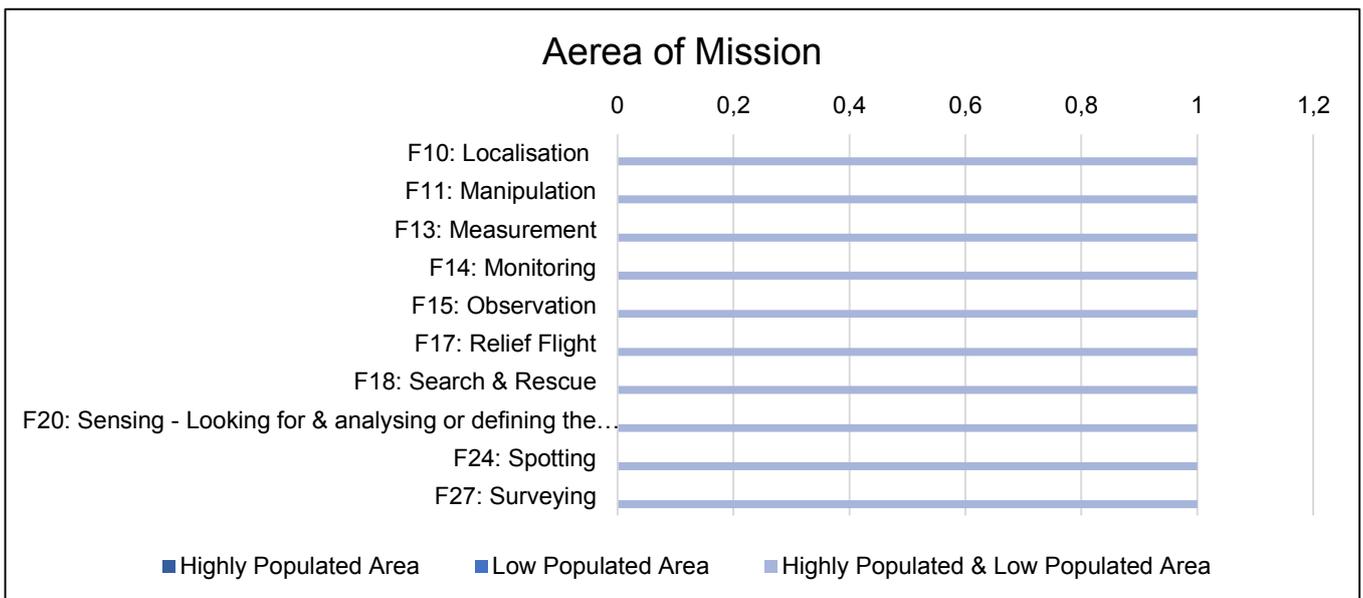
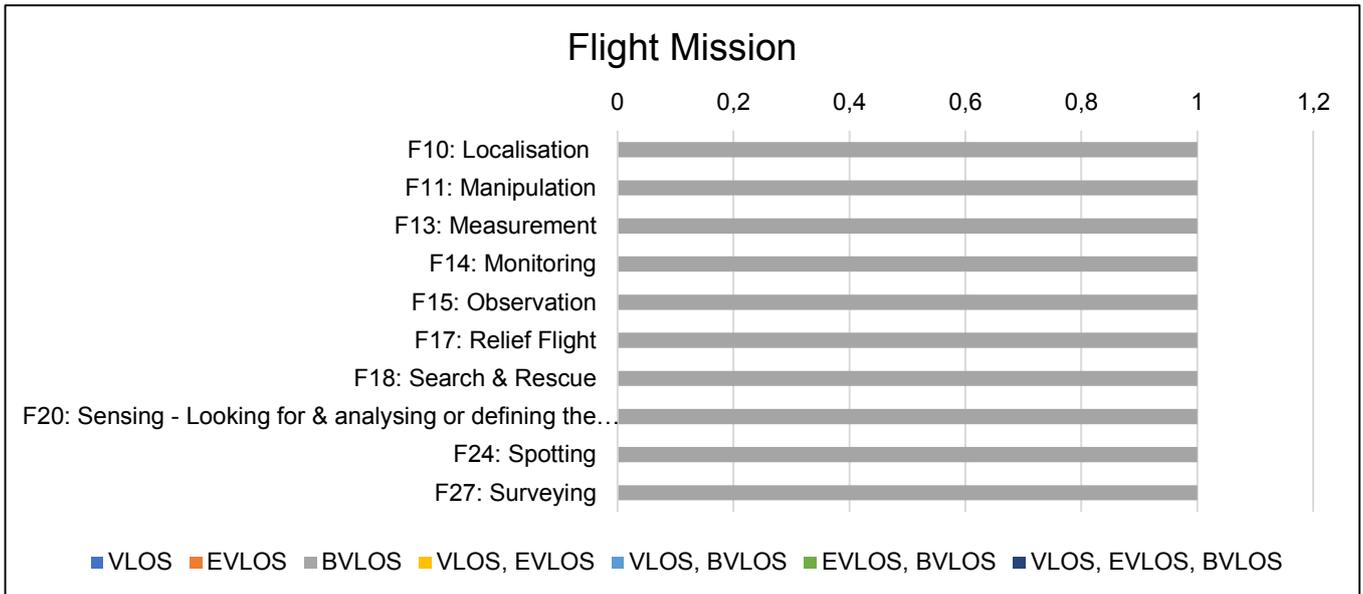
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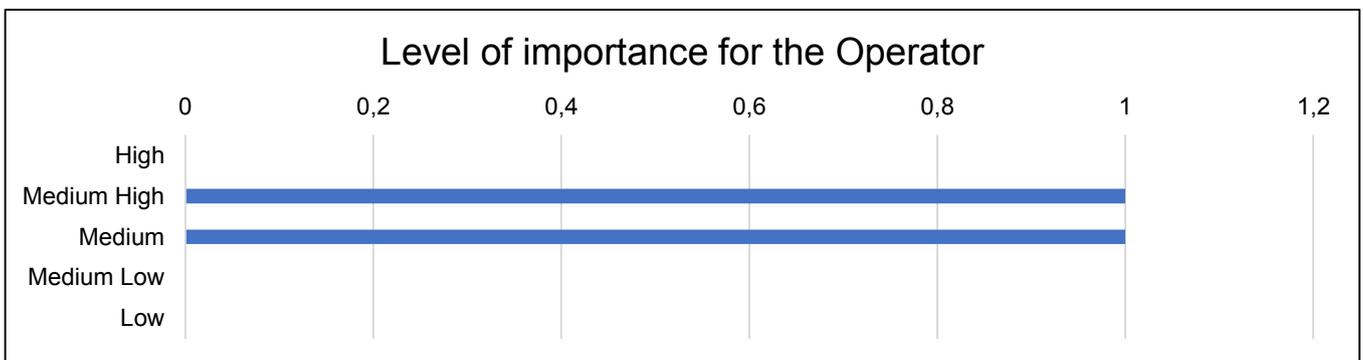
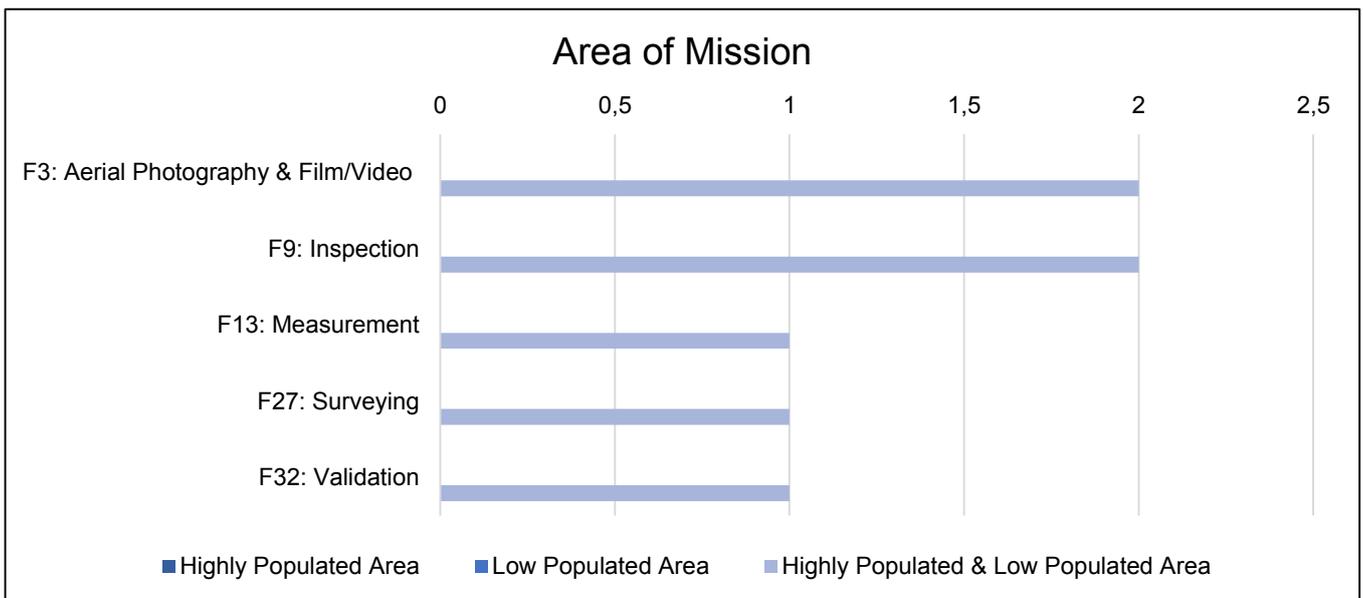
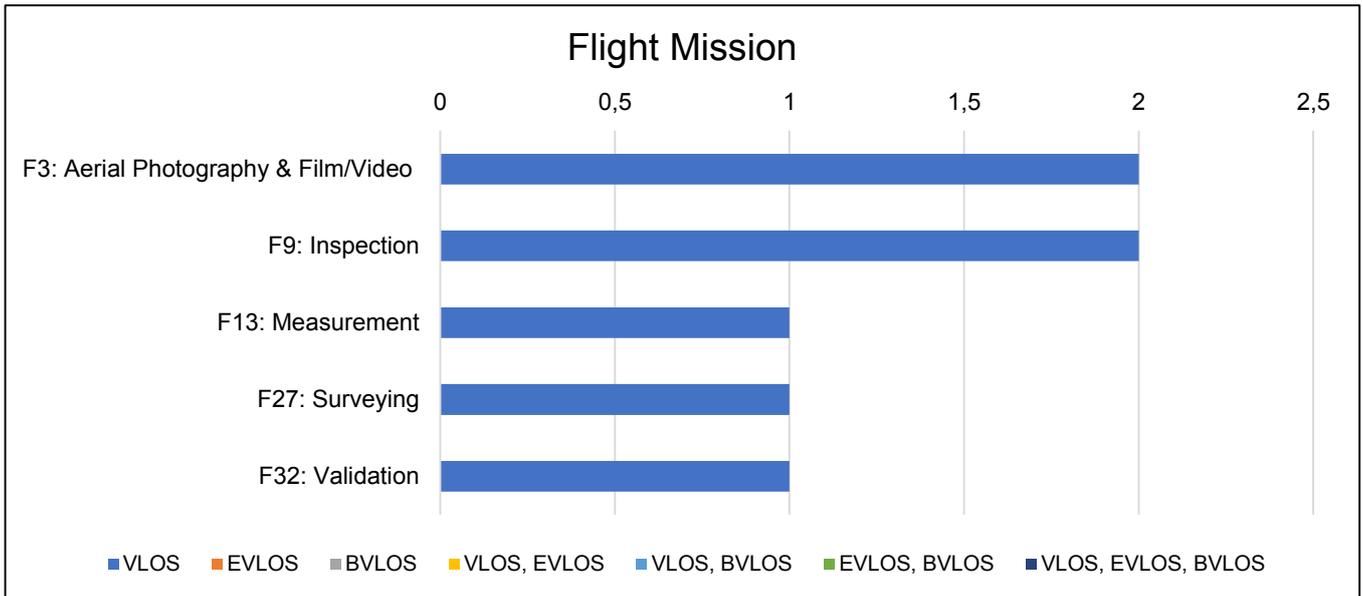
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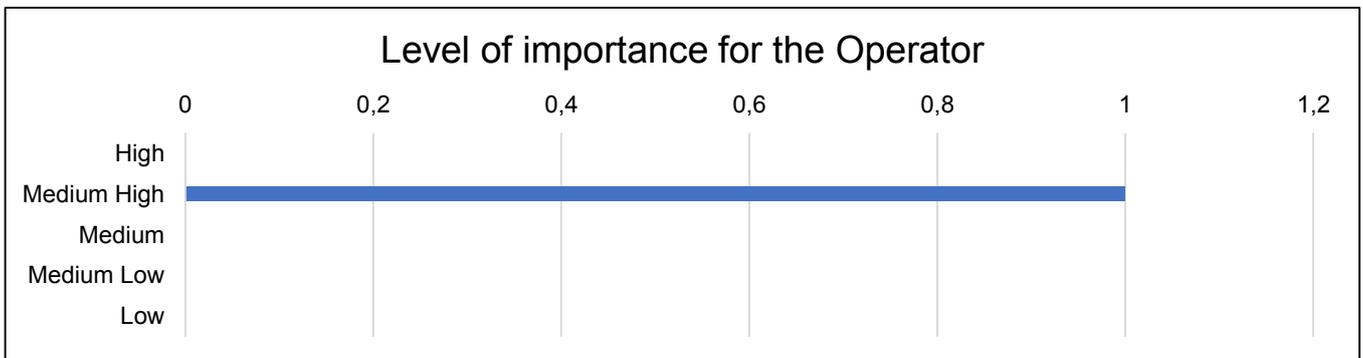
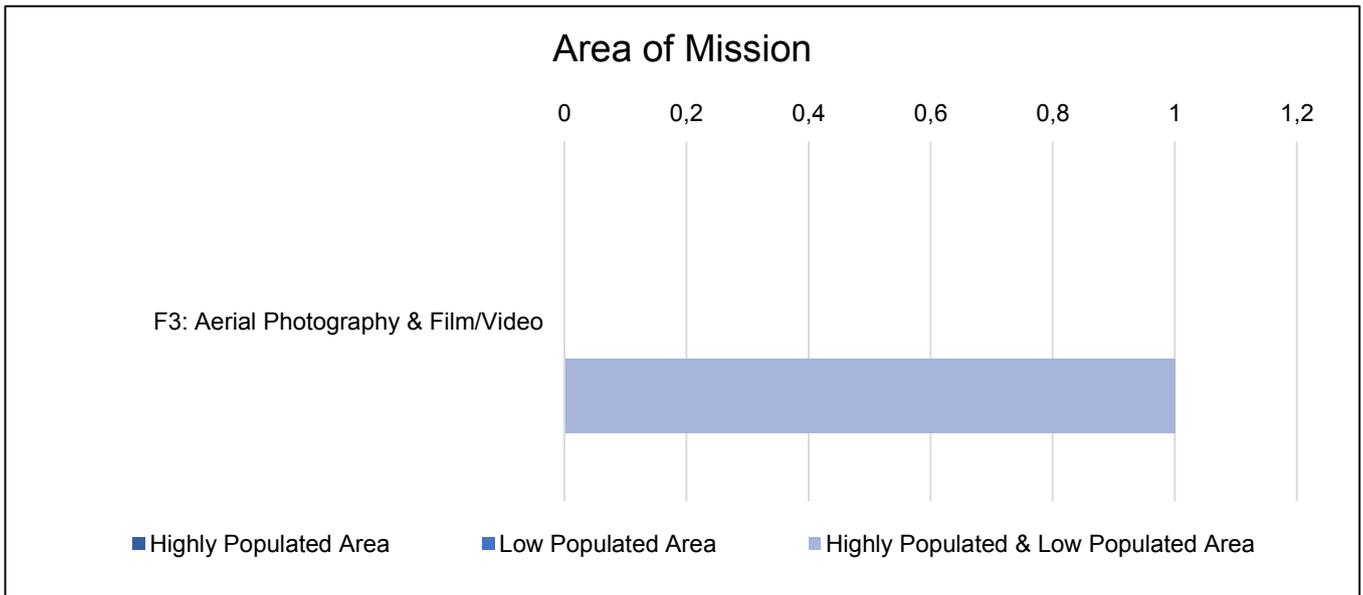
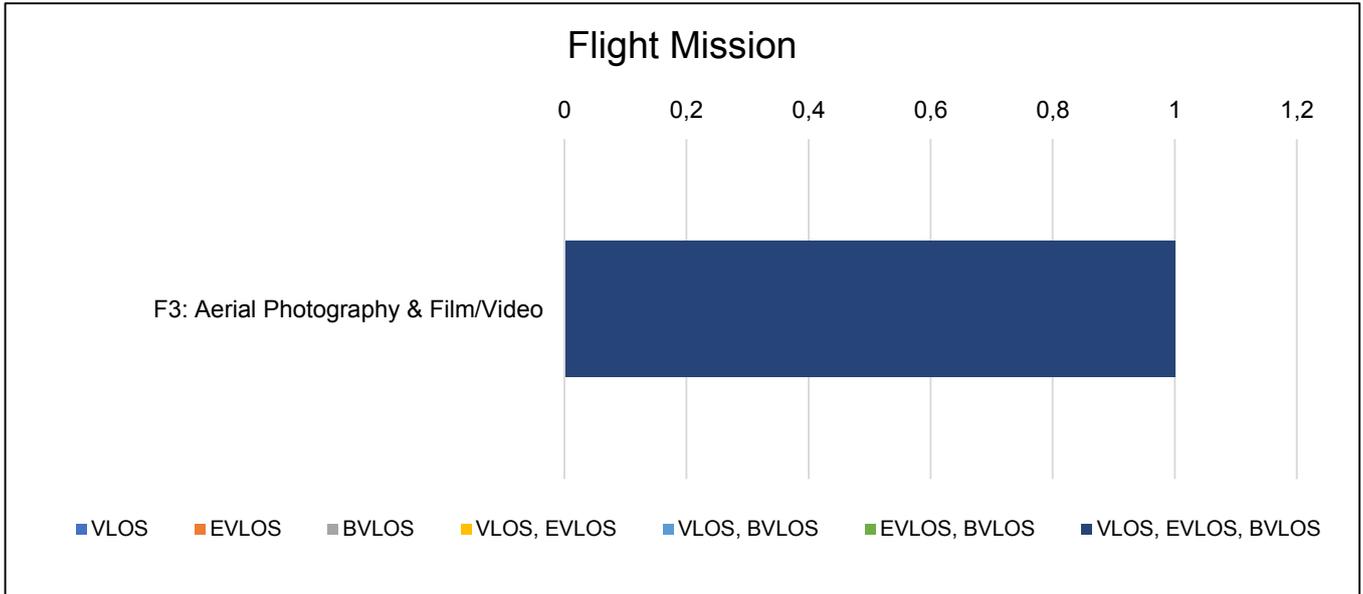
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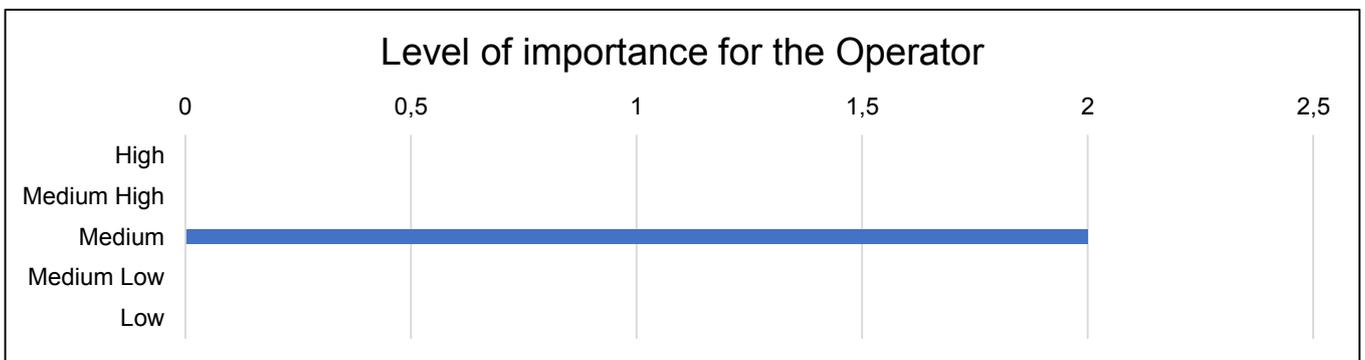
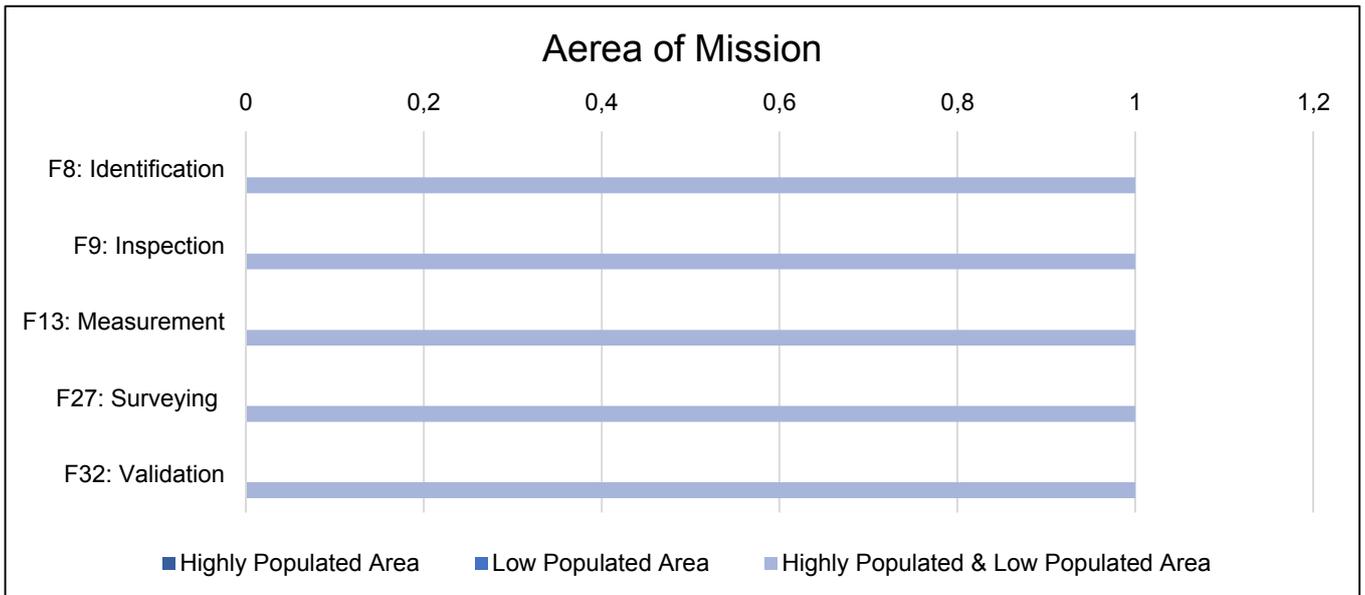
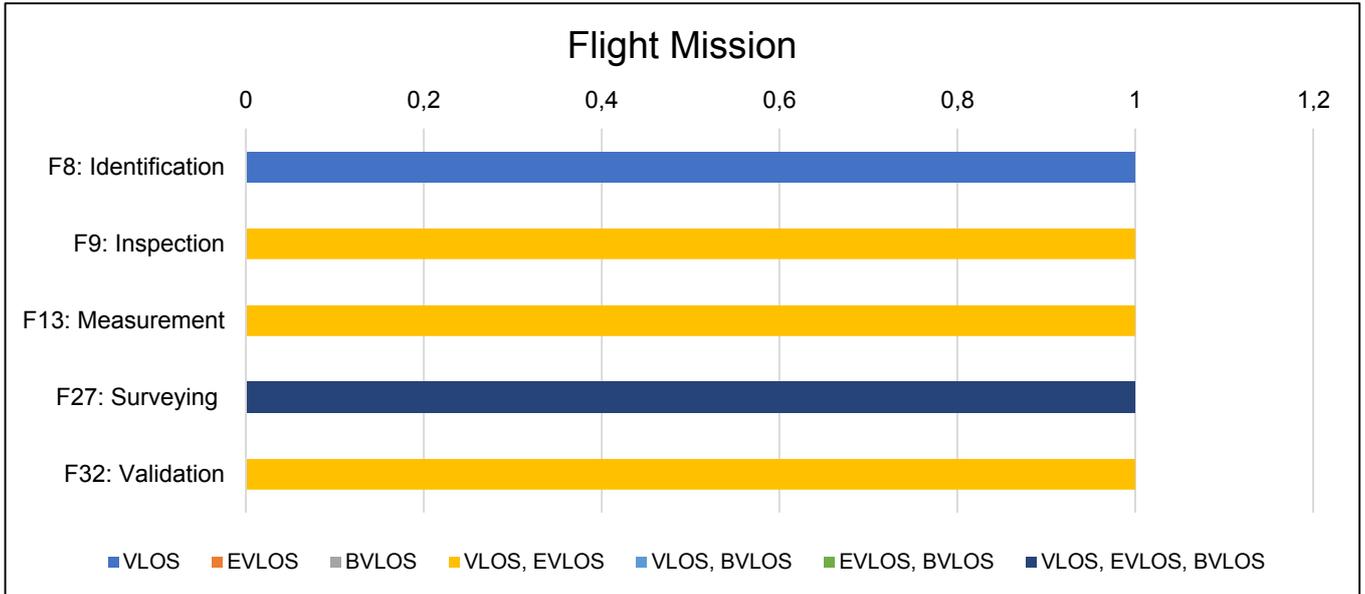
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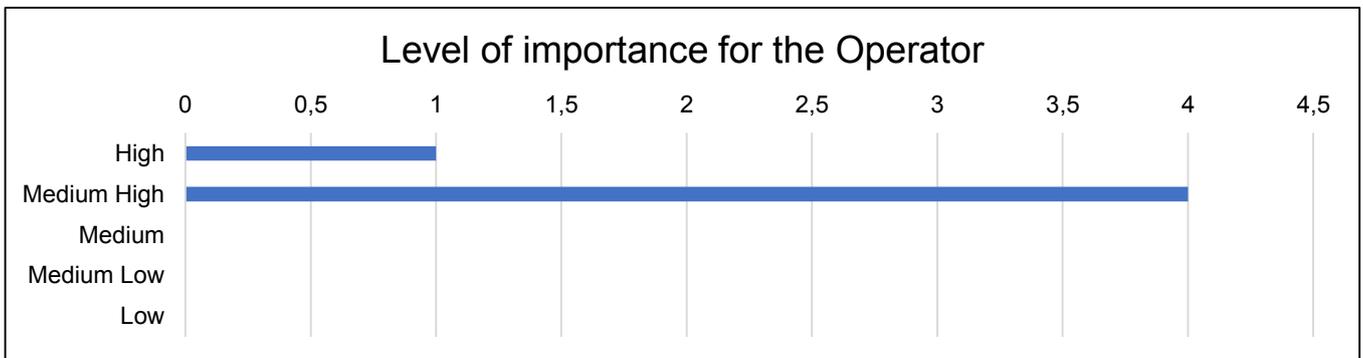
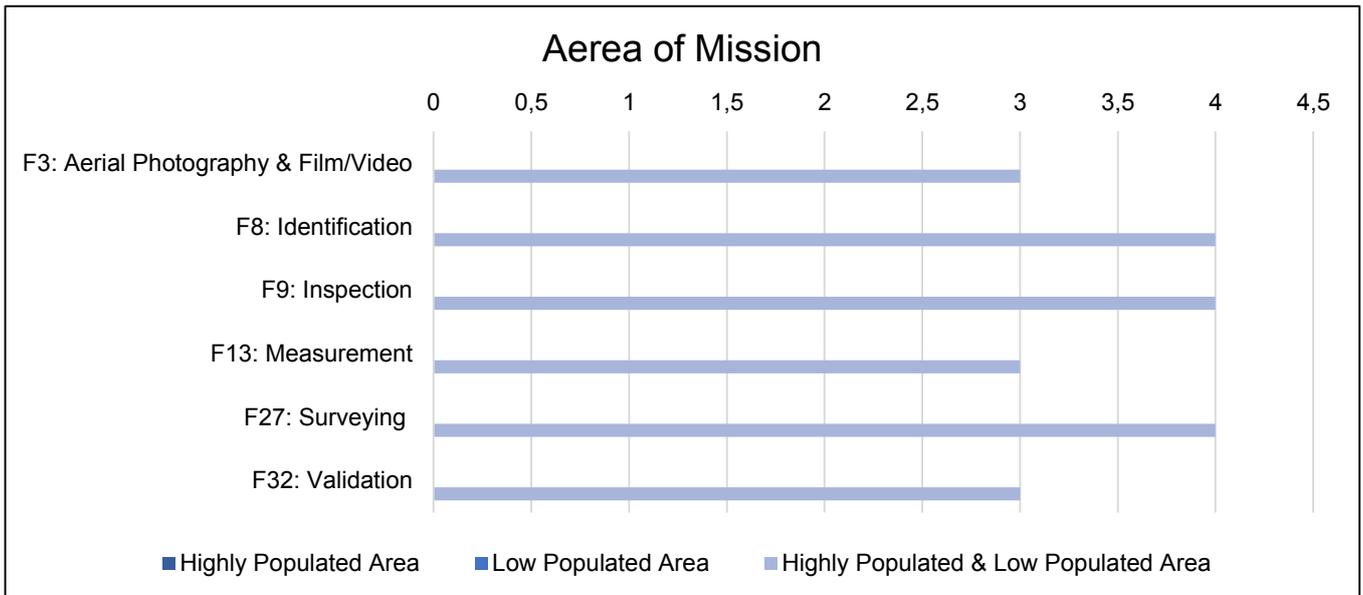
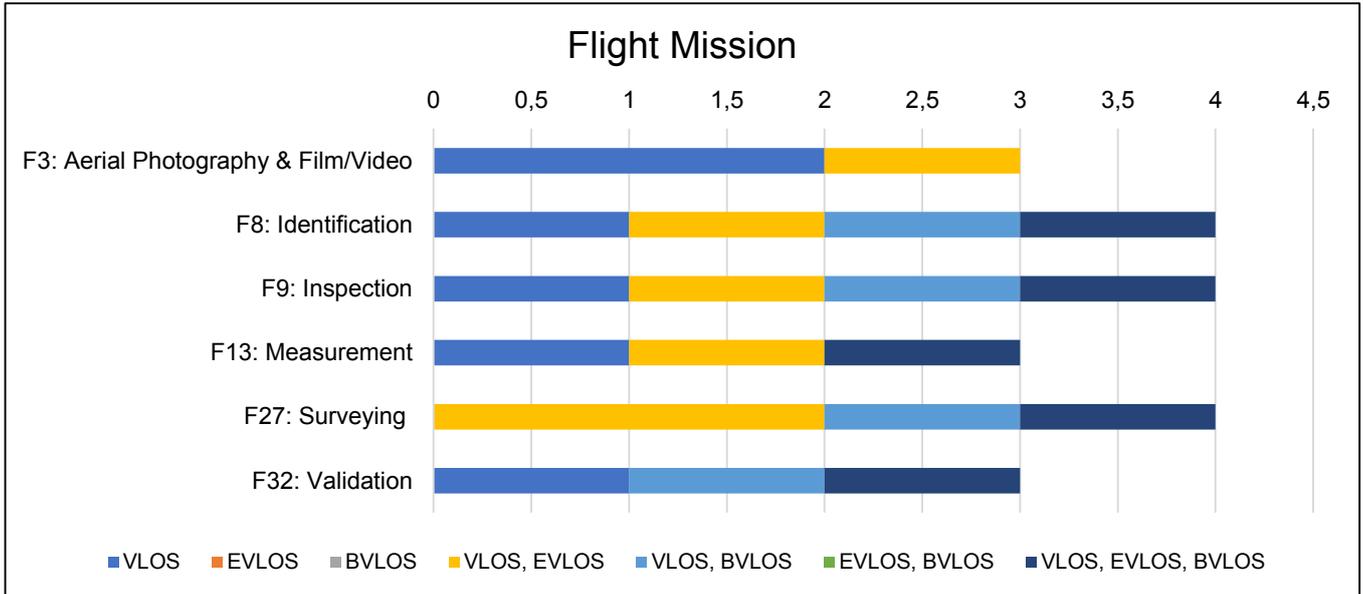
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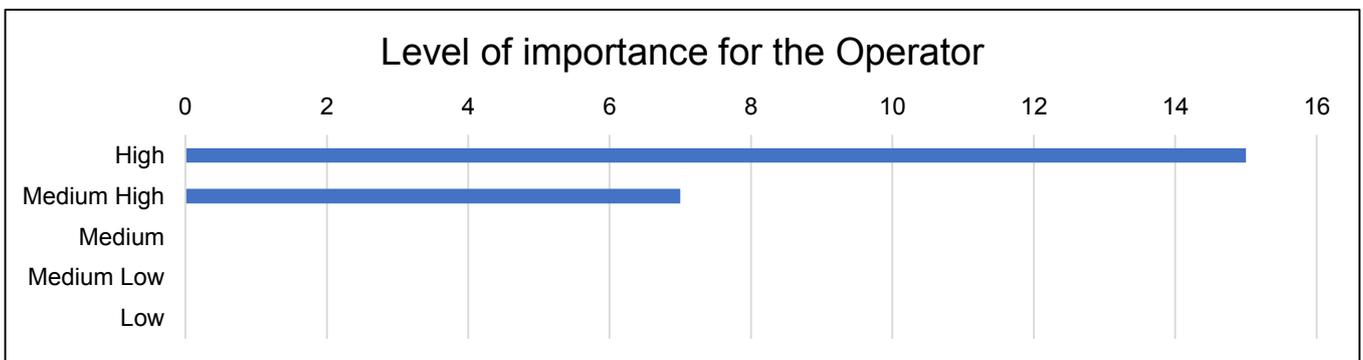
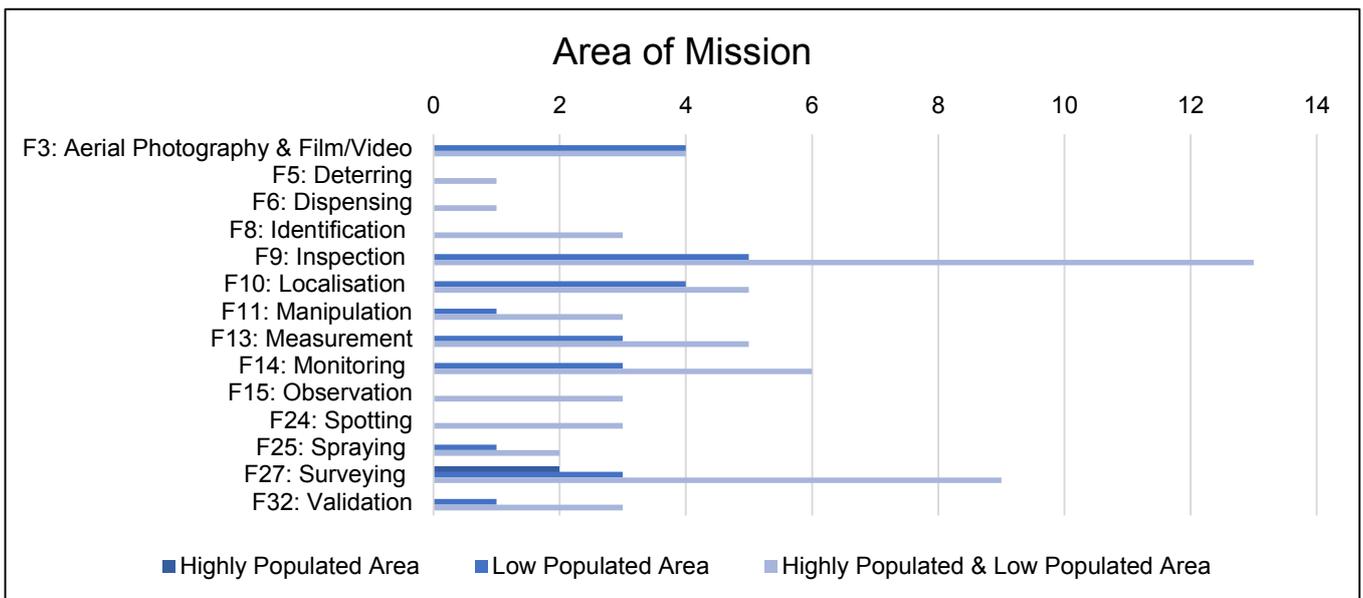
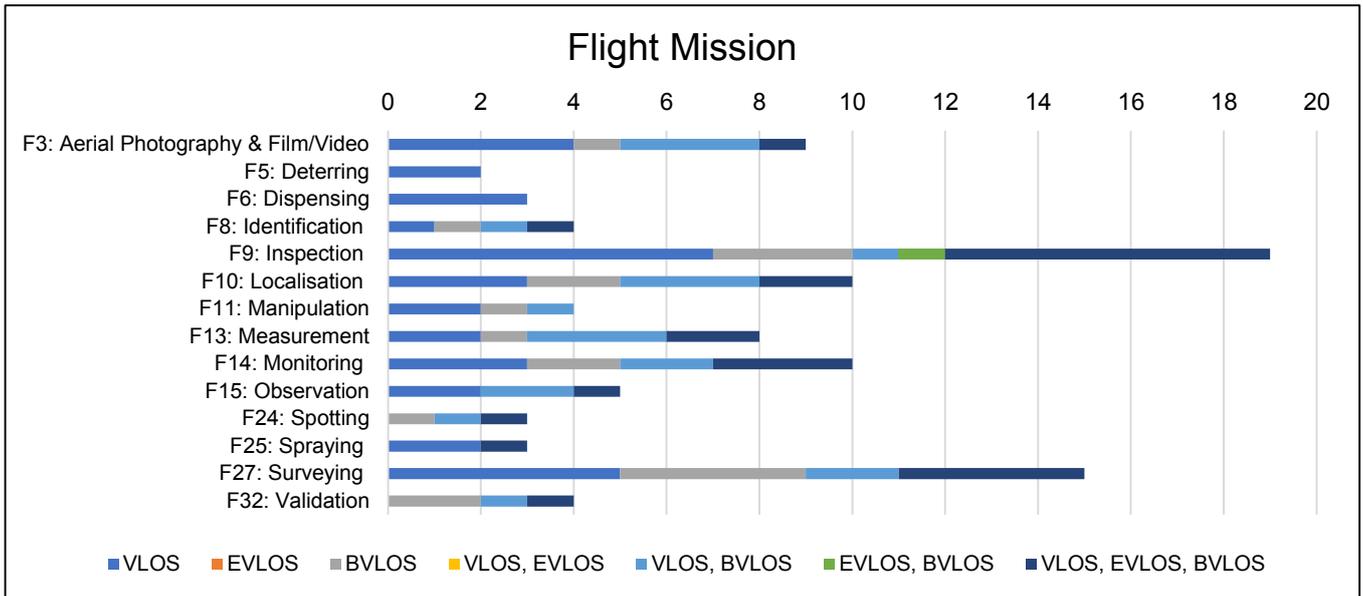
**Survey on Drone Operations & Safety Risk Analysis Methods**



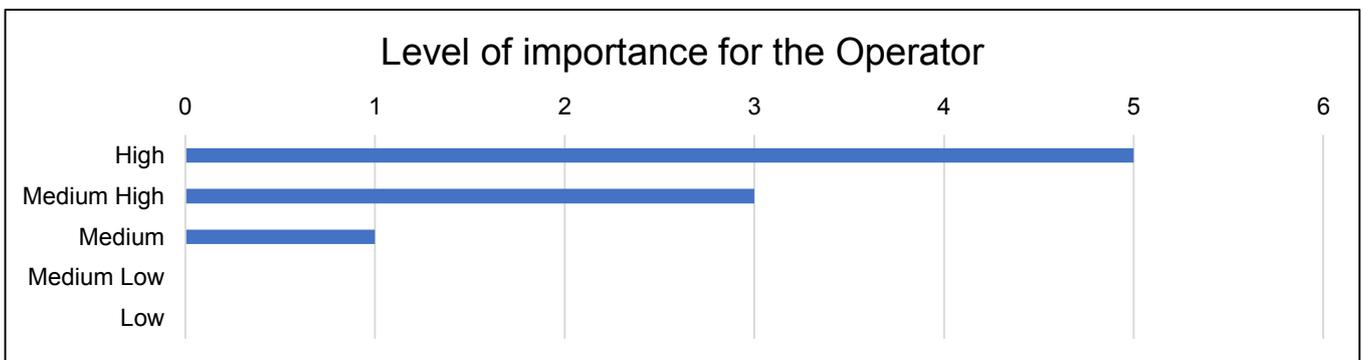
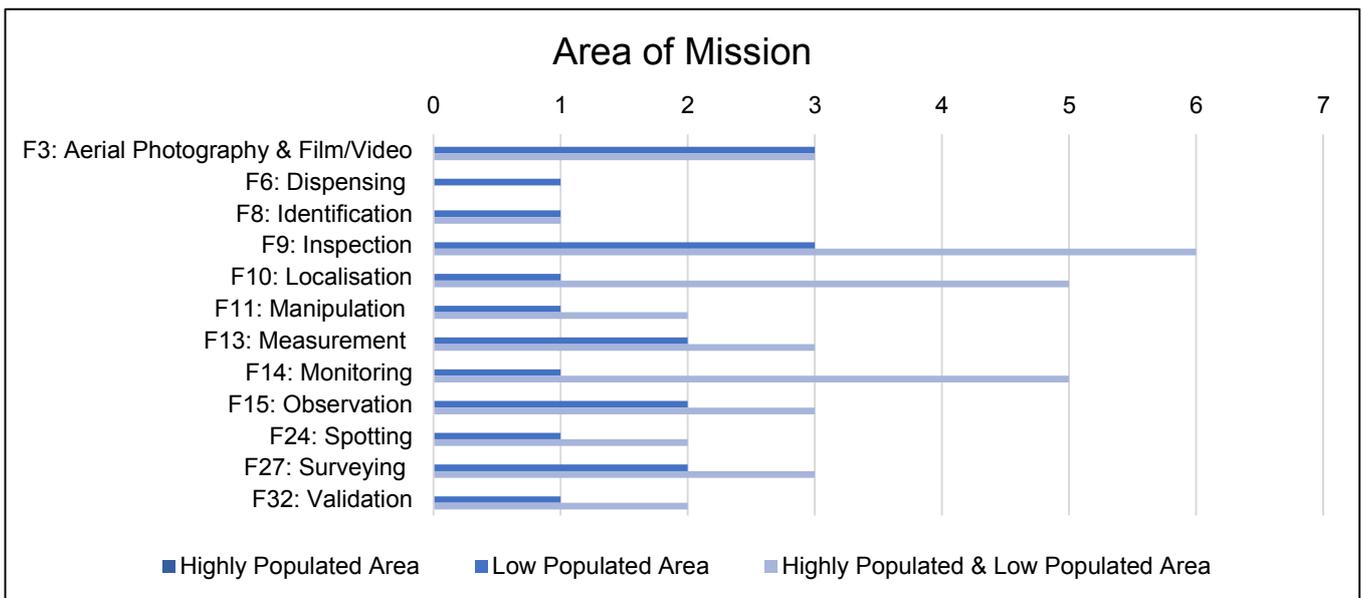
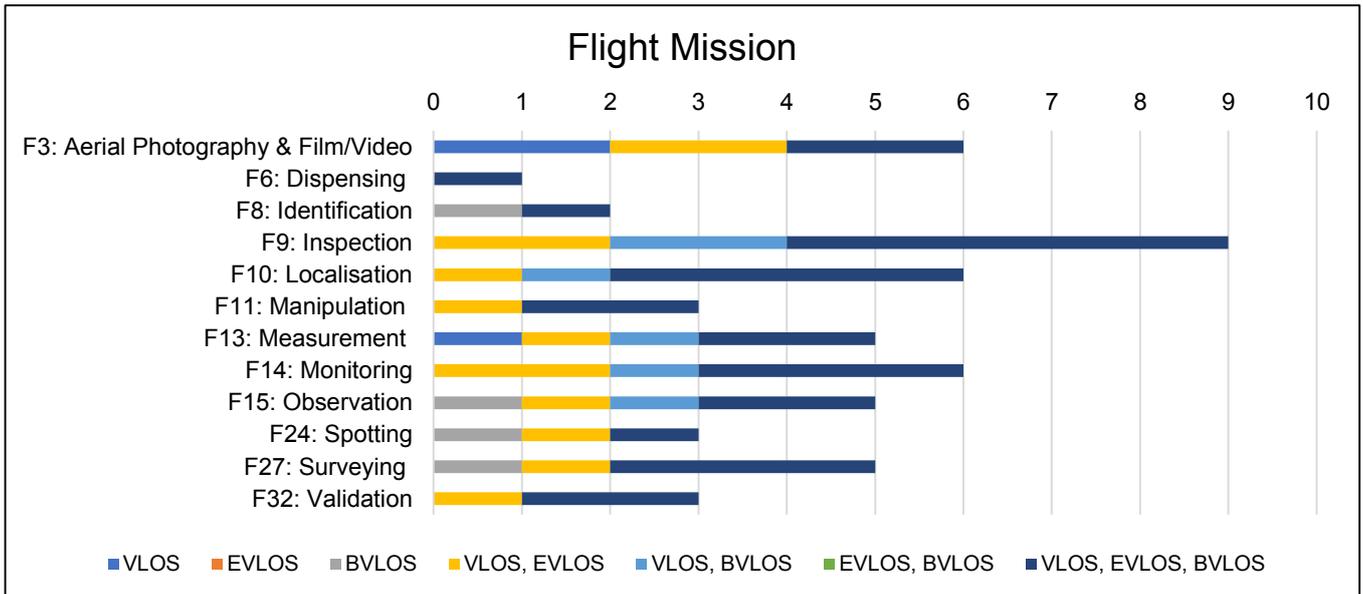
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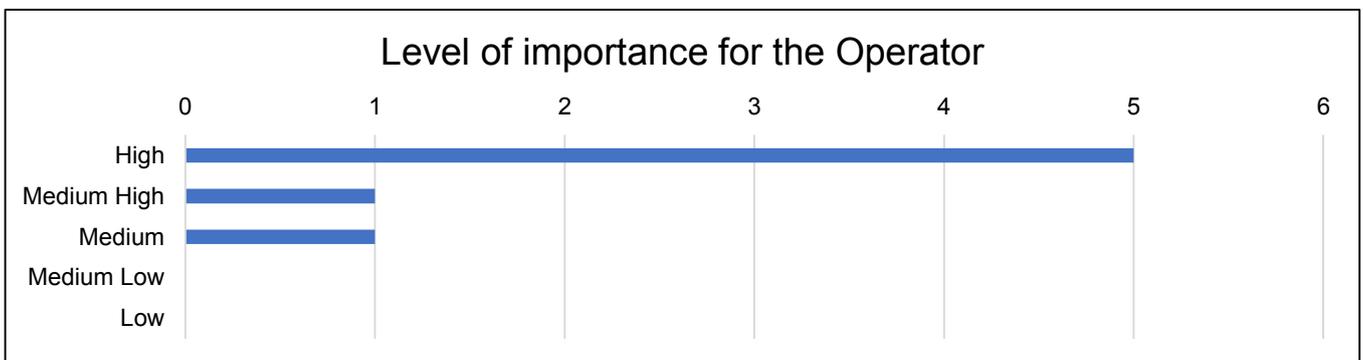
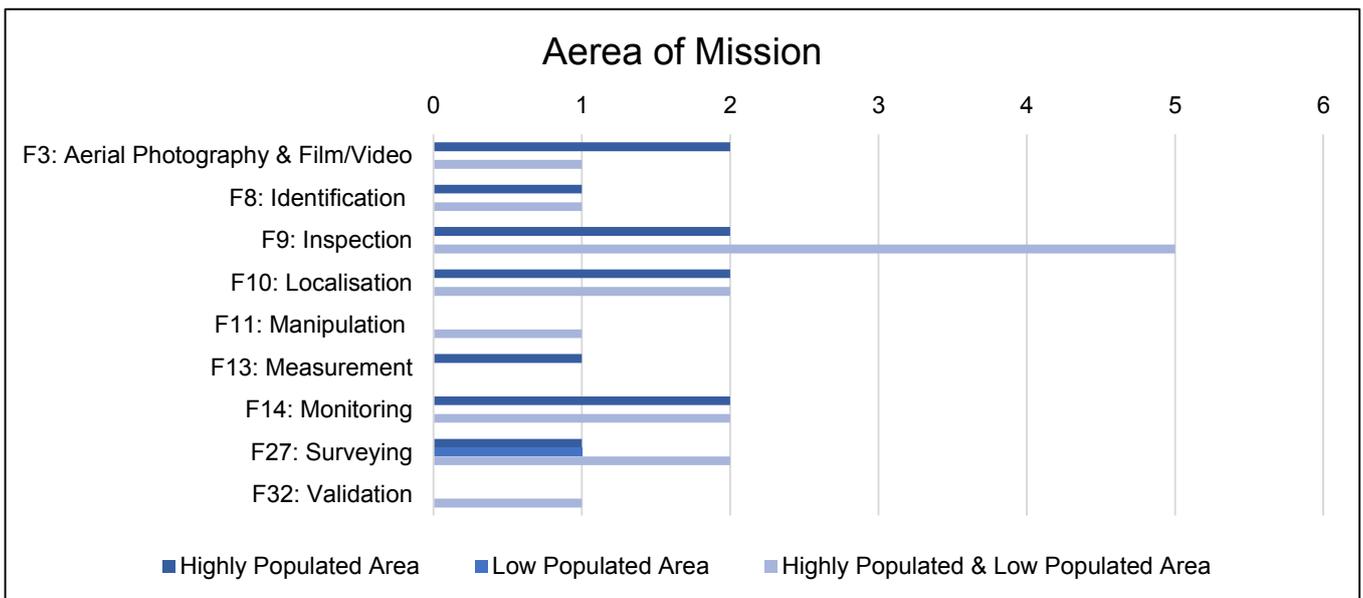
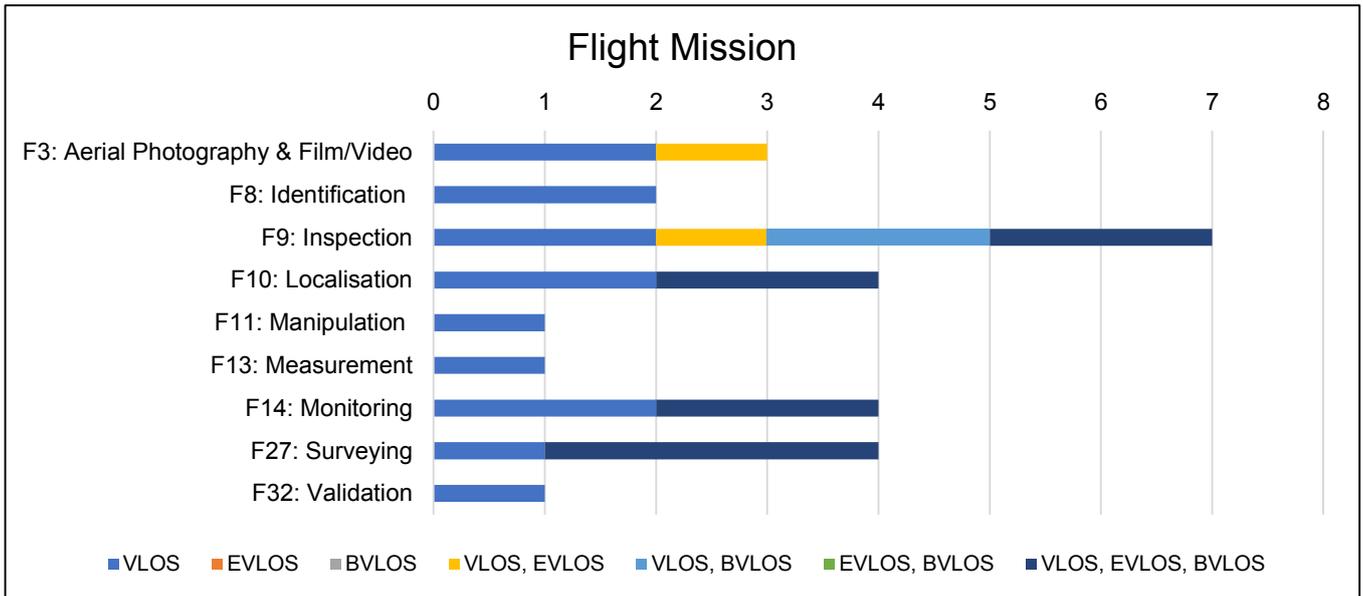
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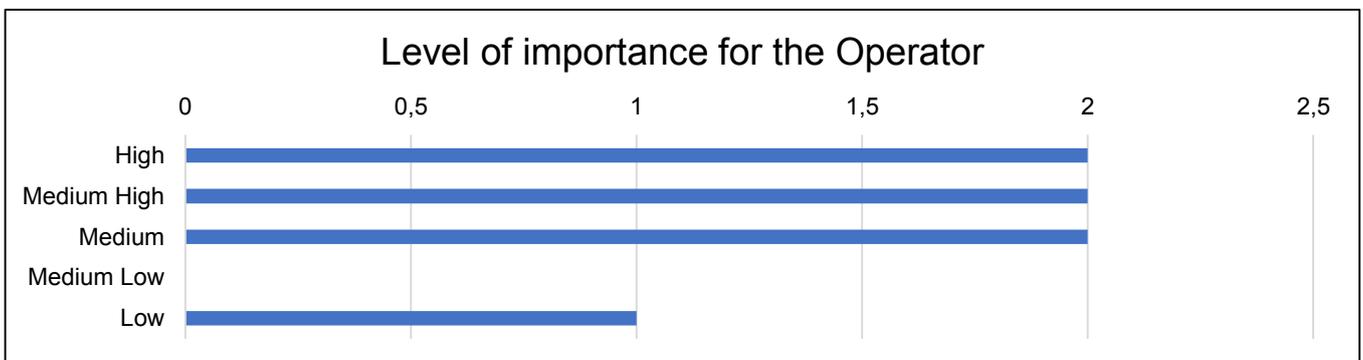
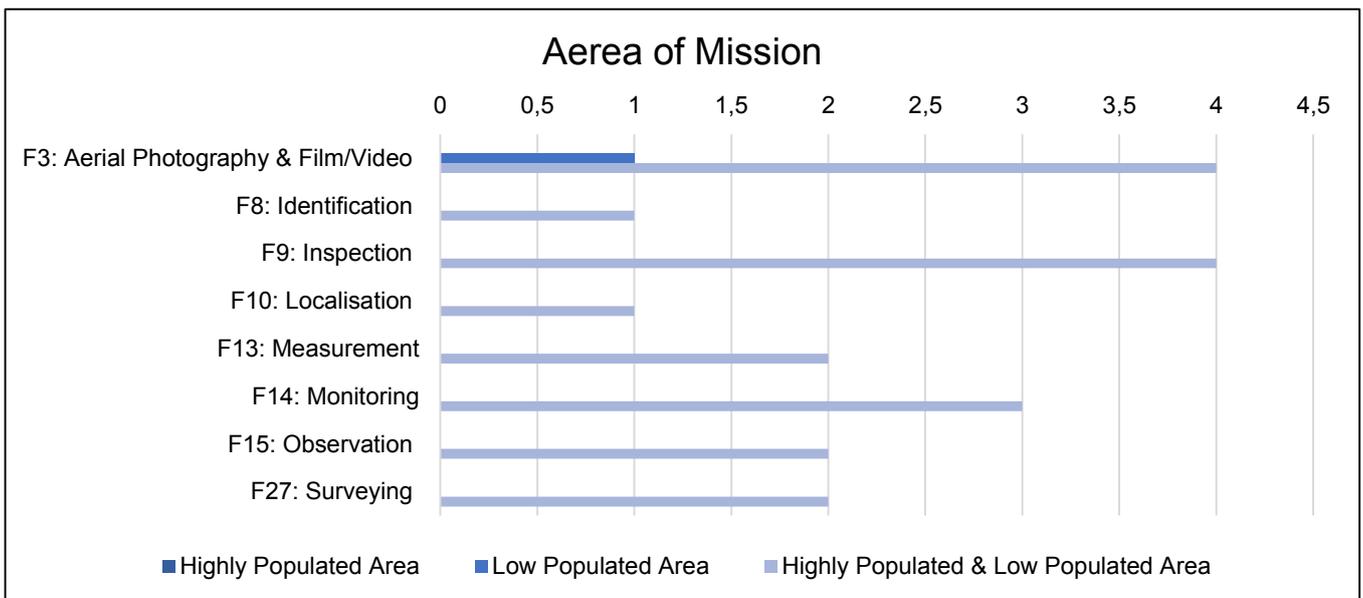
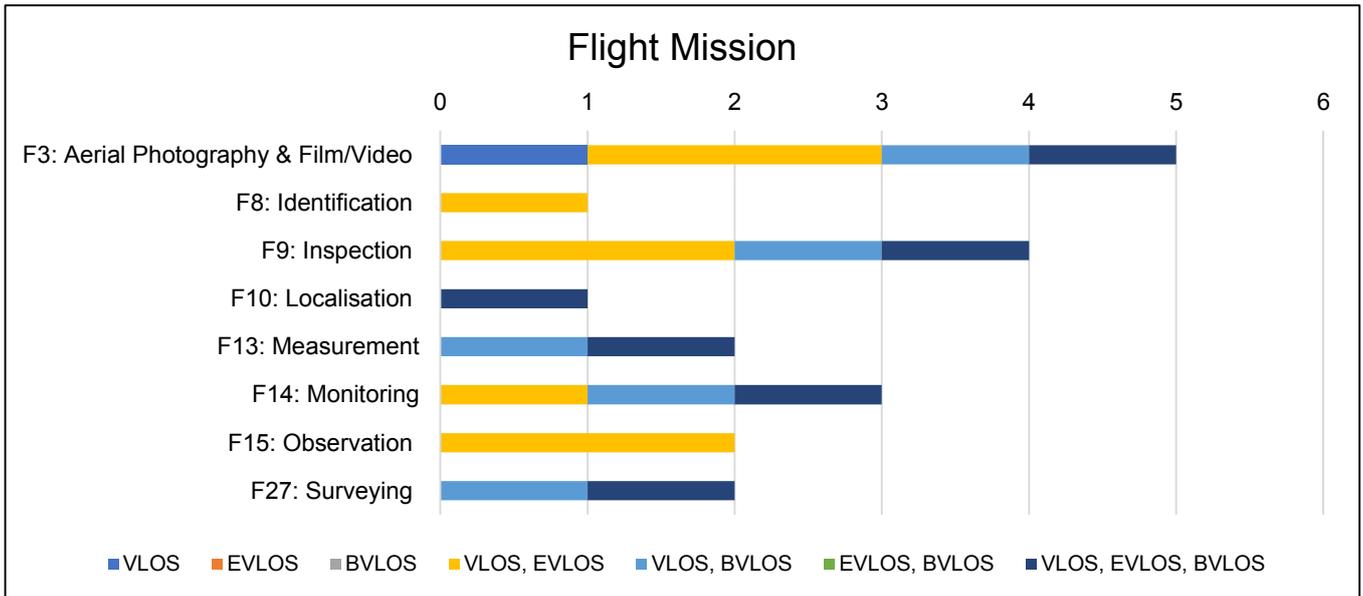
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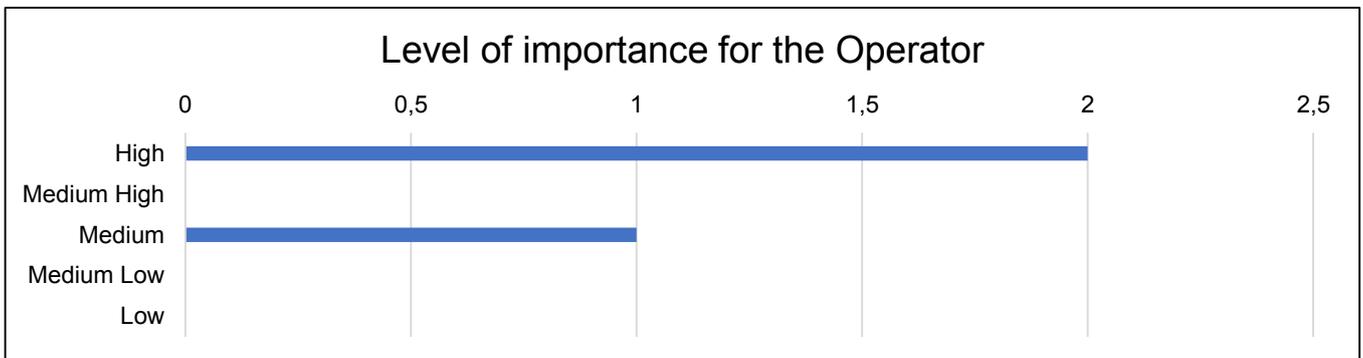
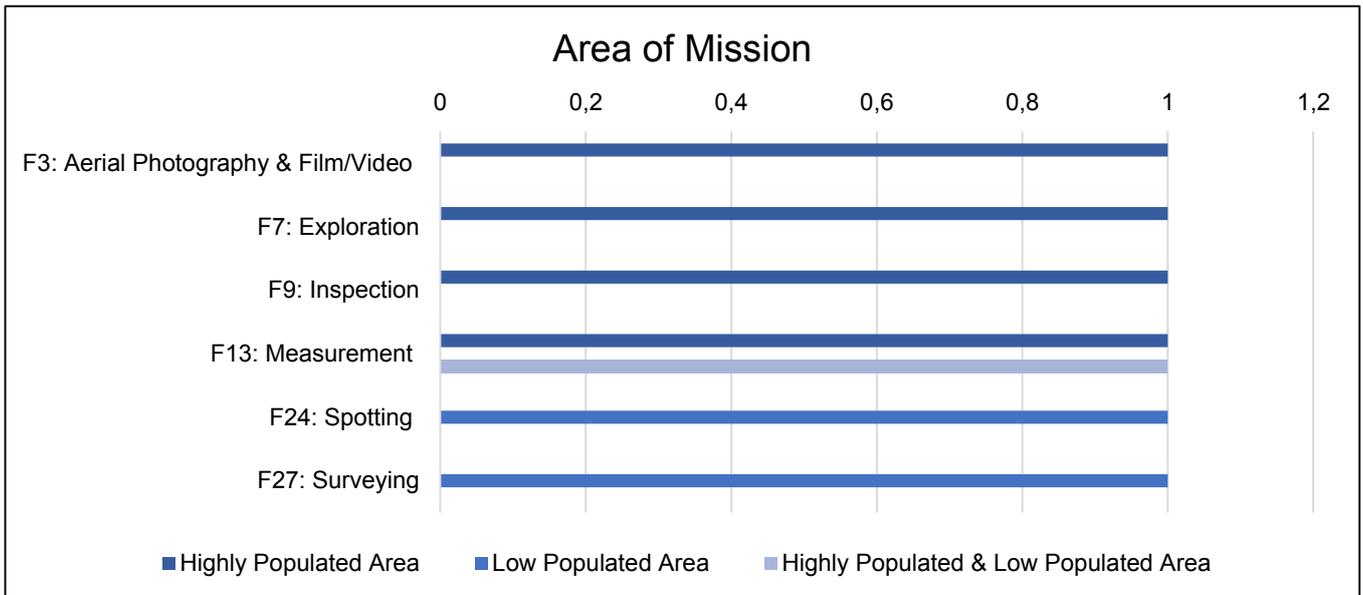
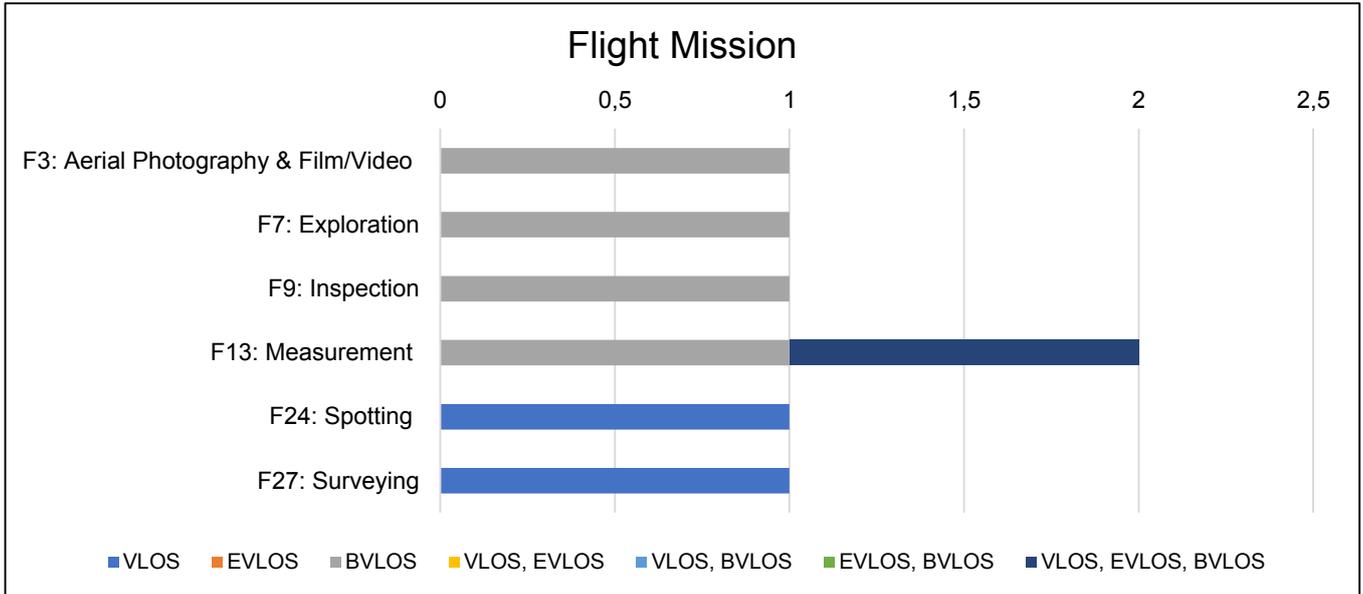
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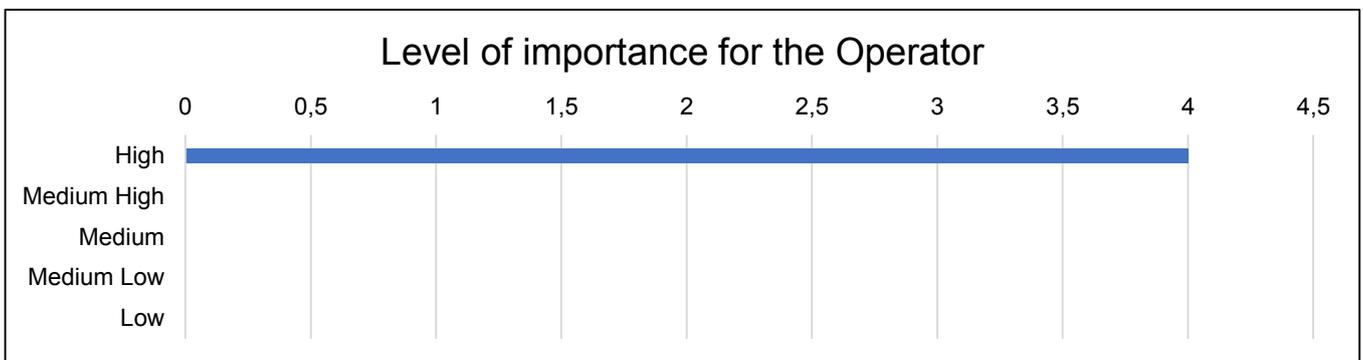
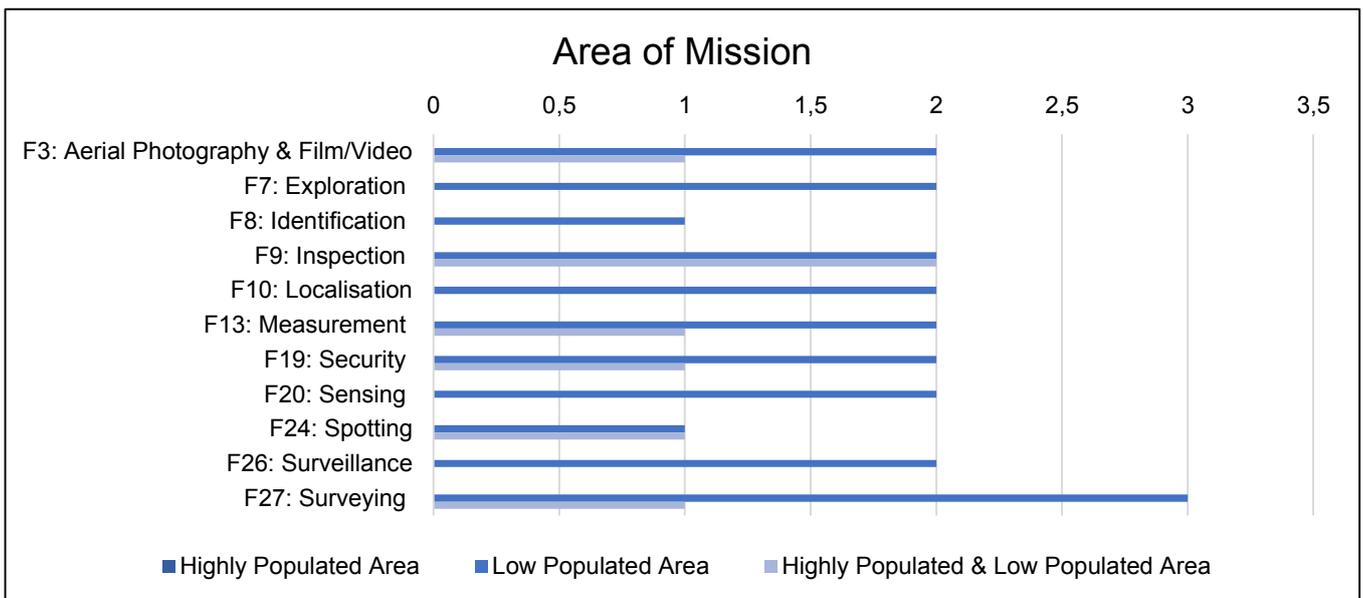
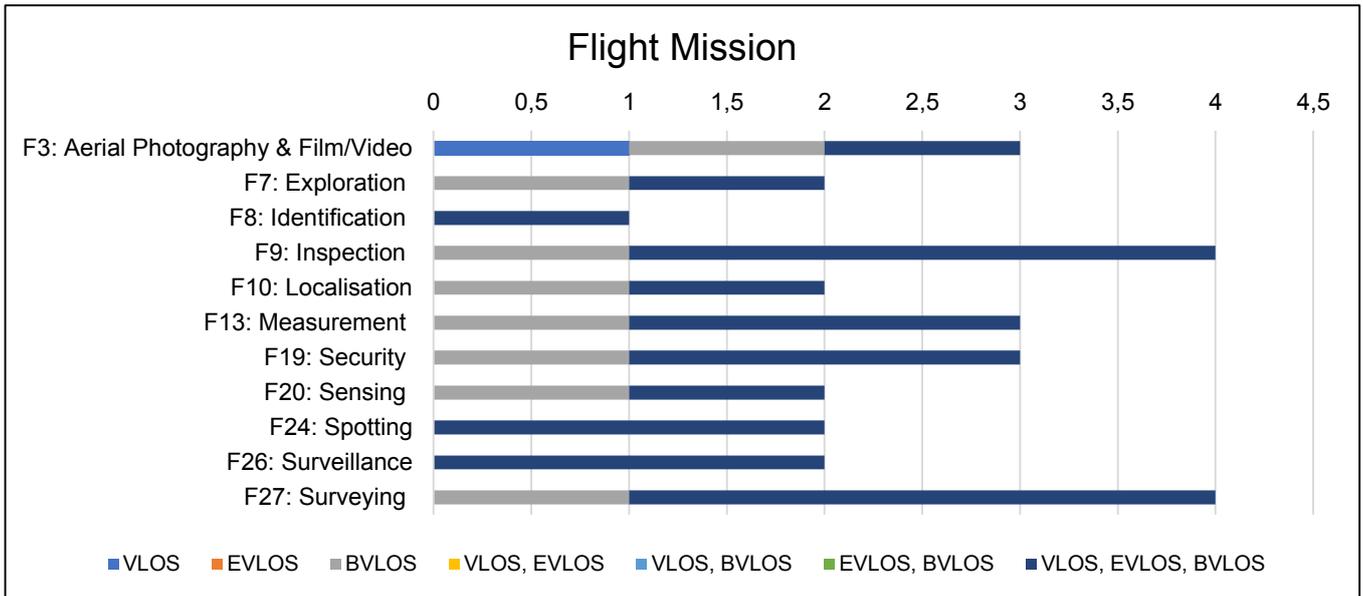
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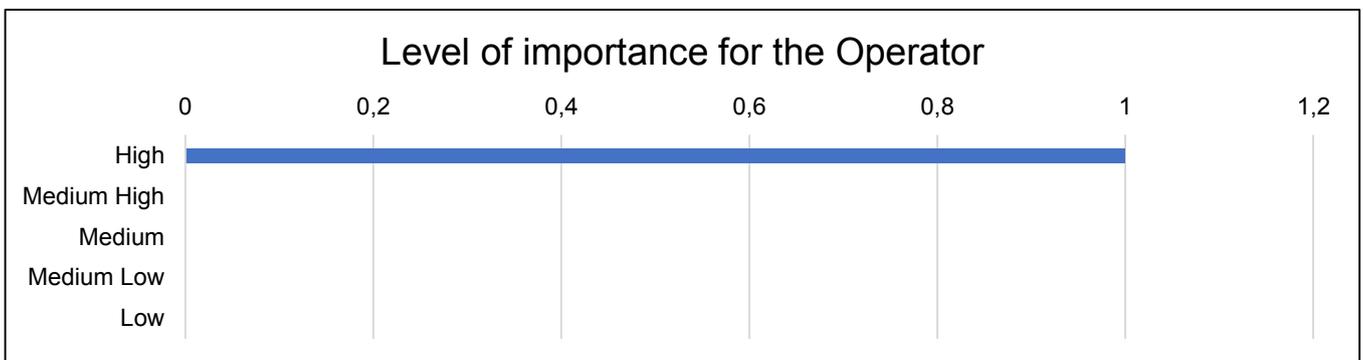
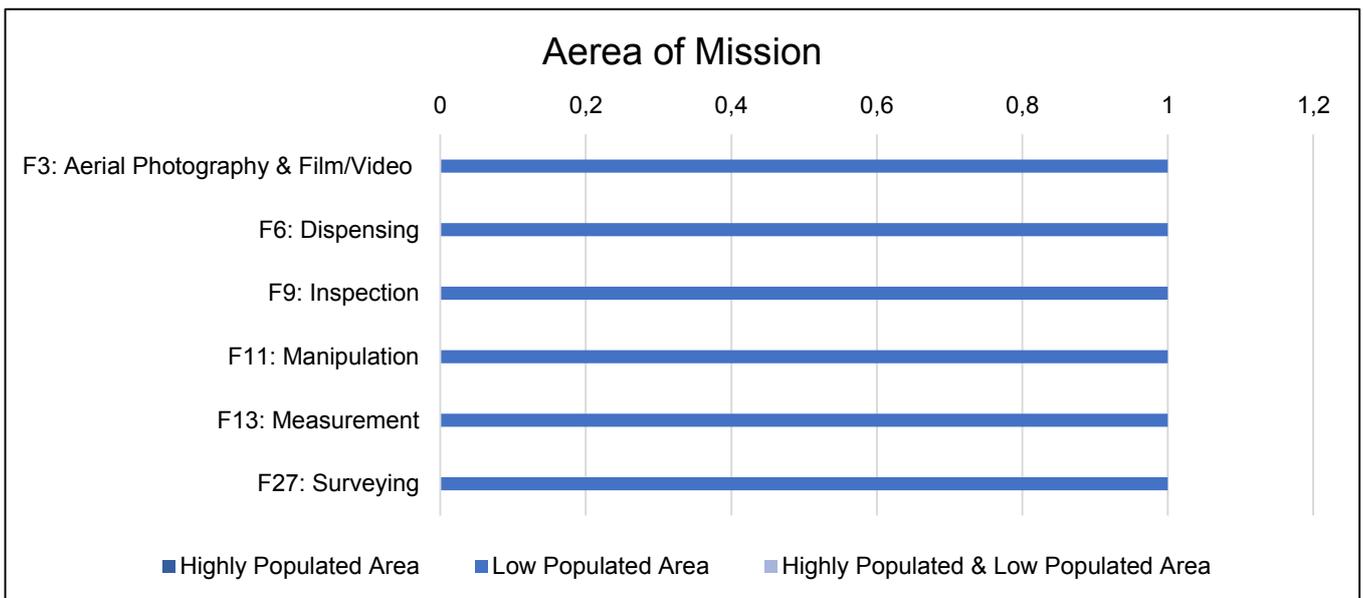
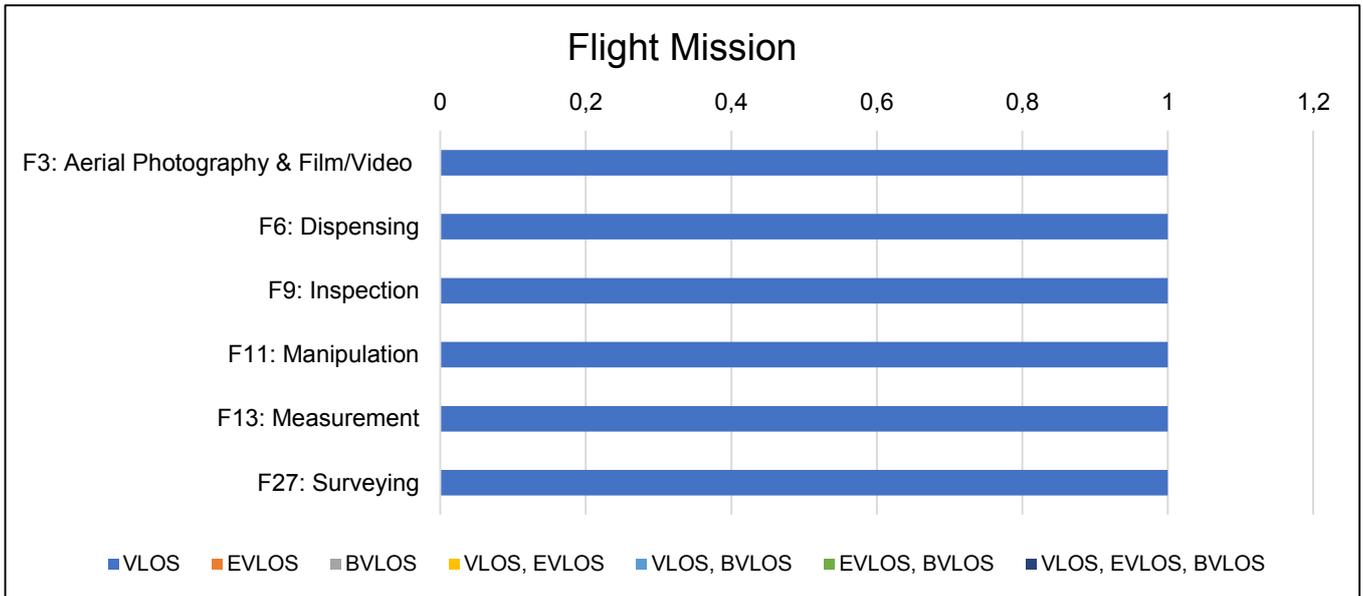
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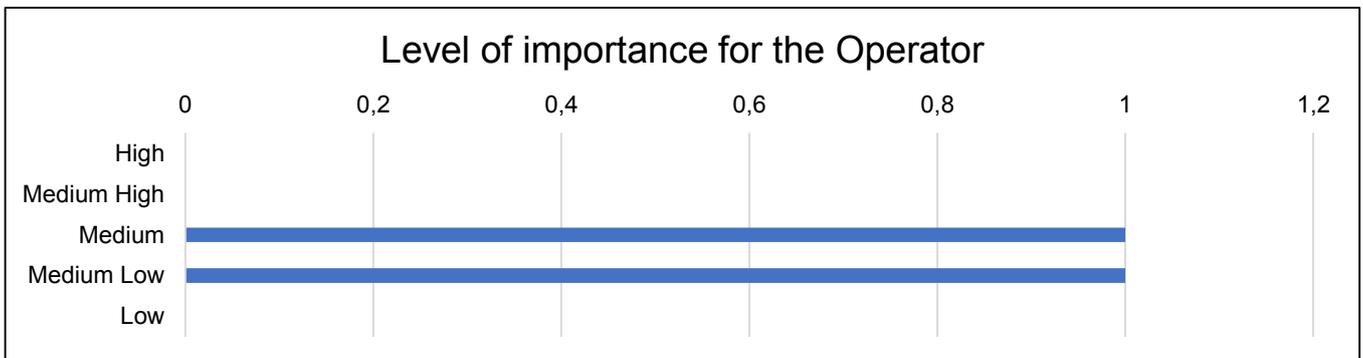
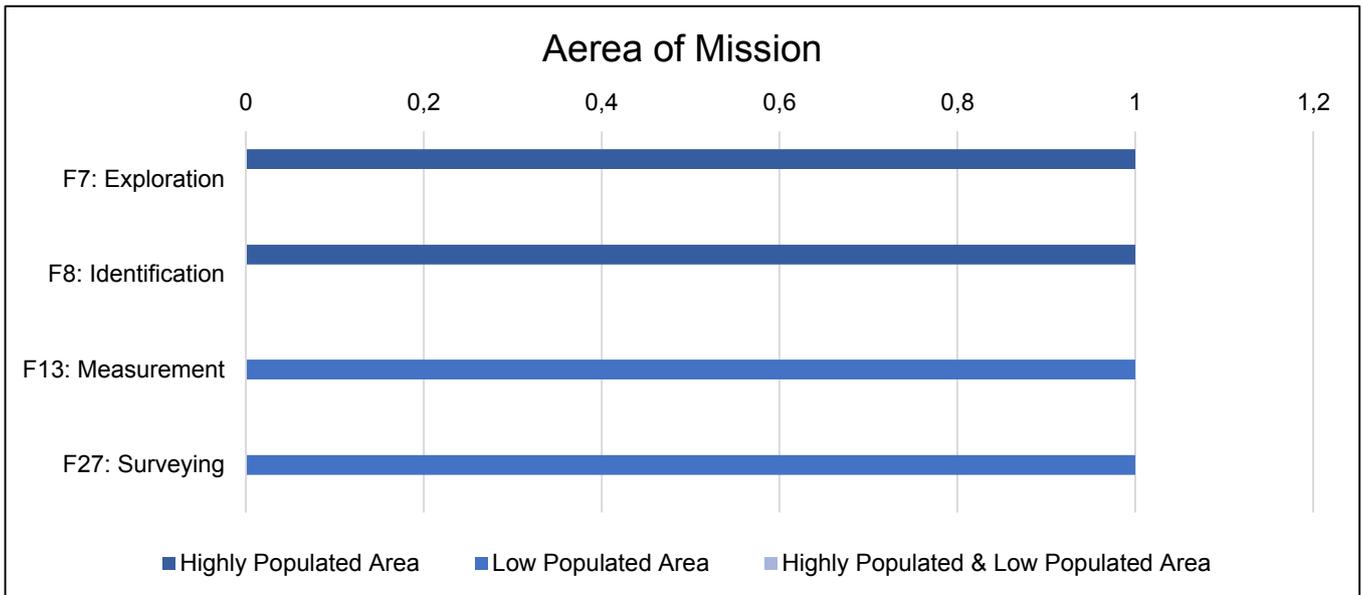
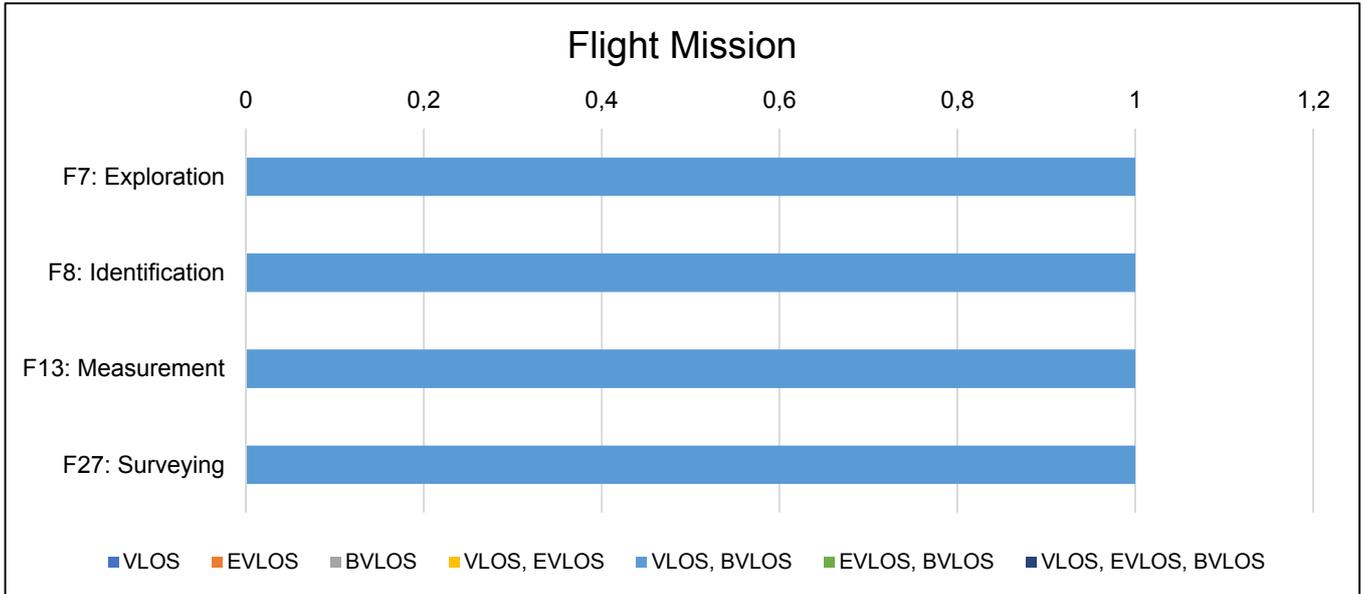
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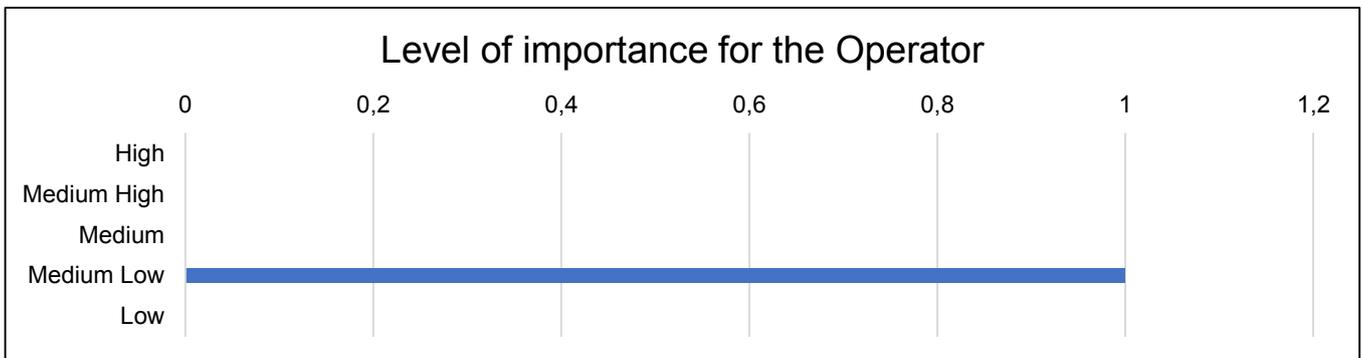
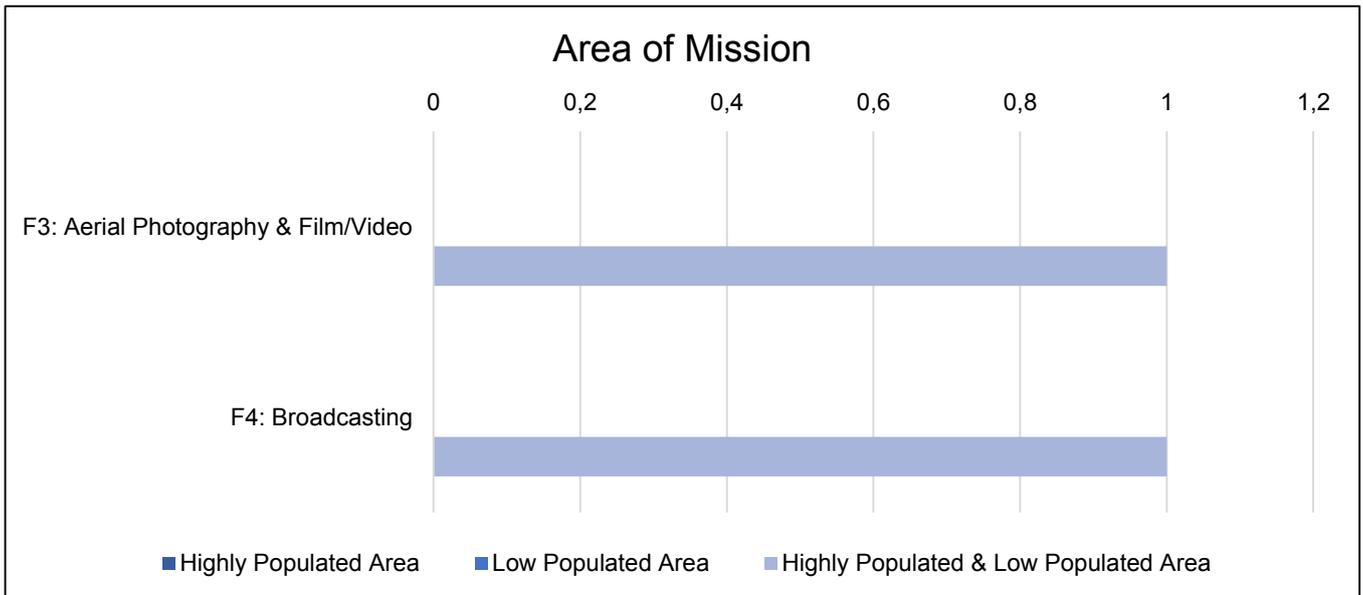
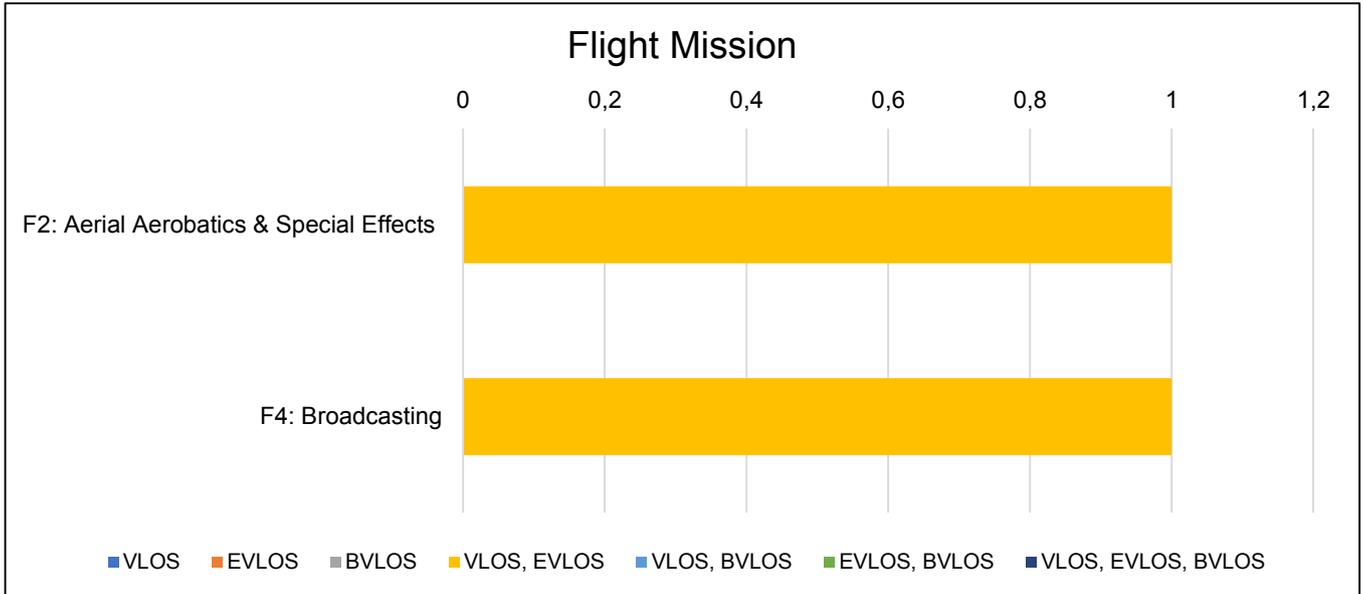
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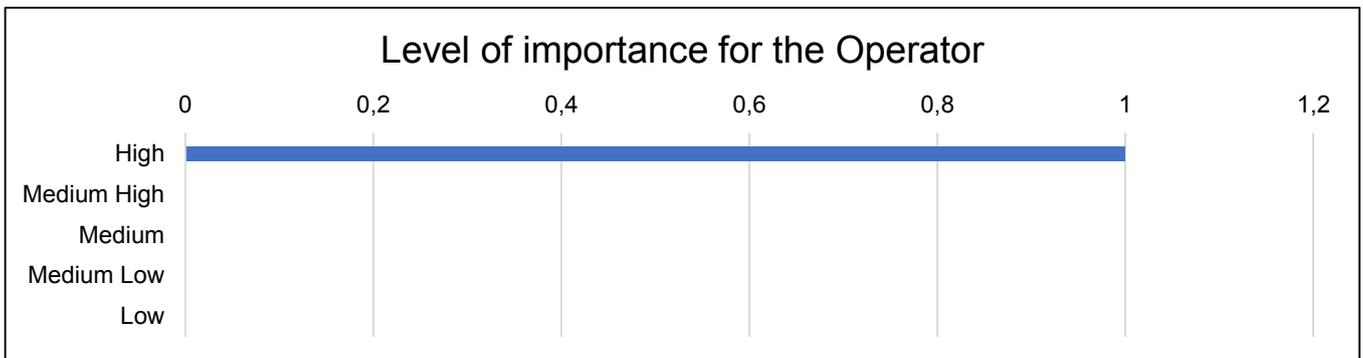
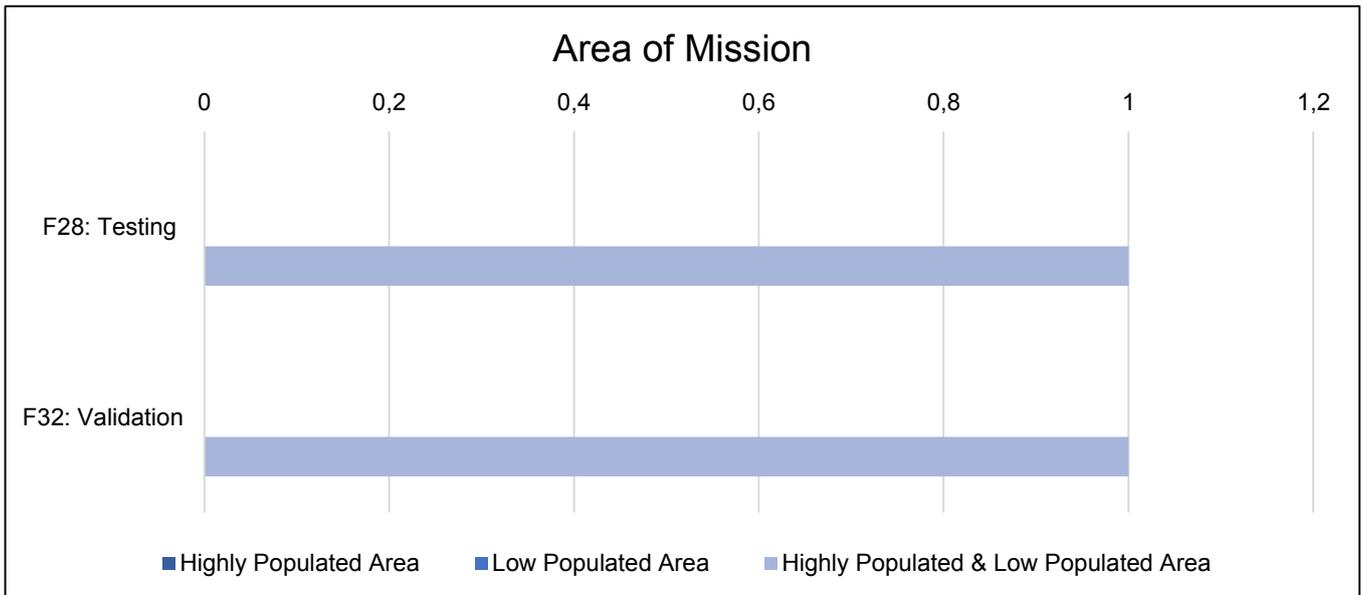
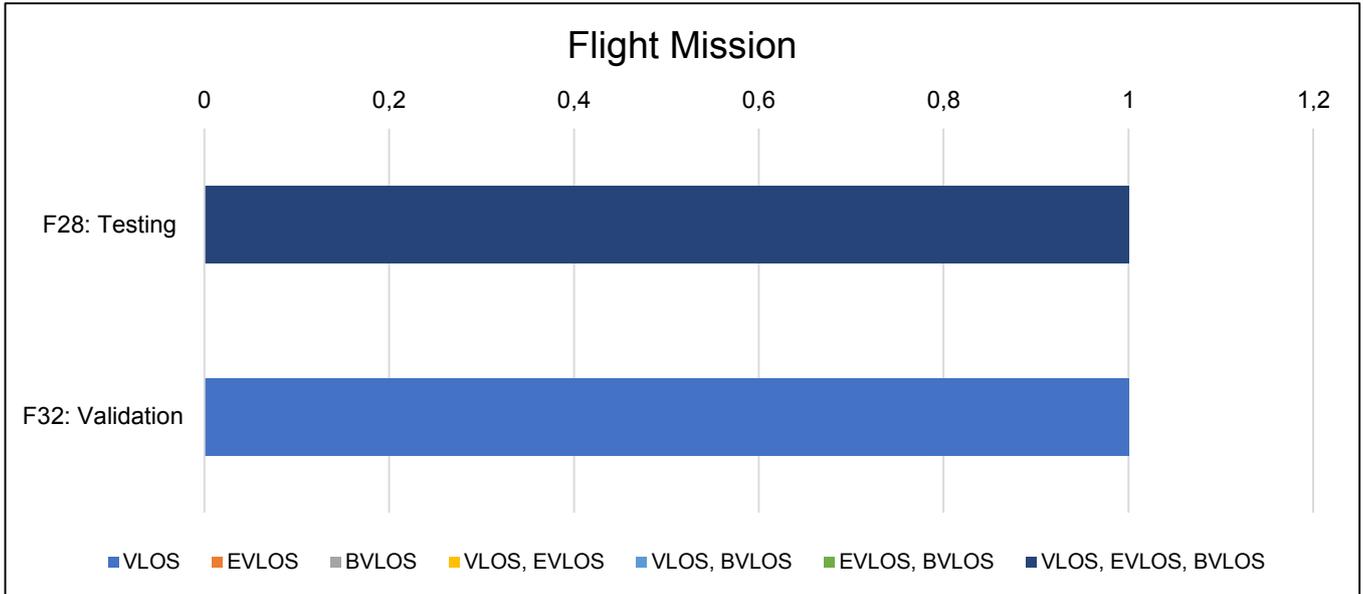
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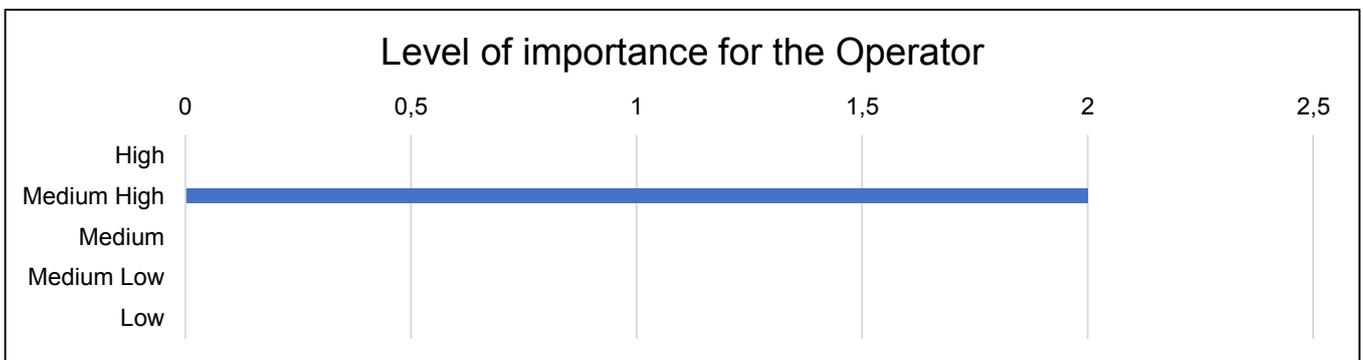
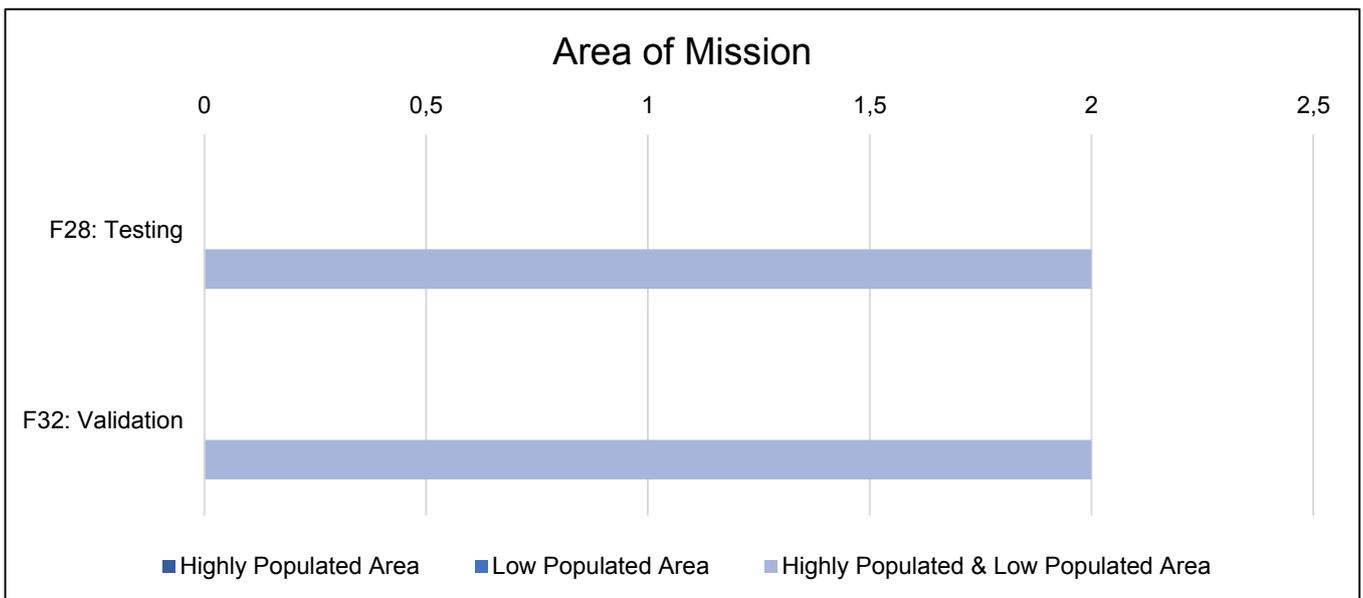
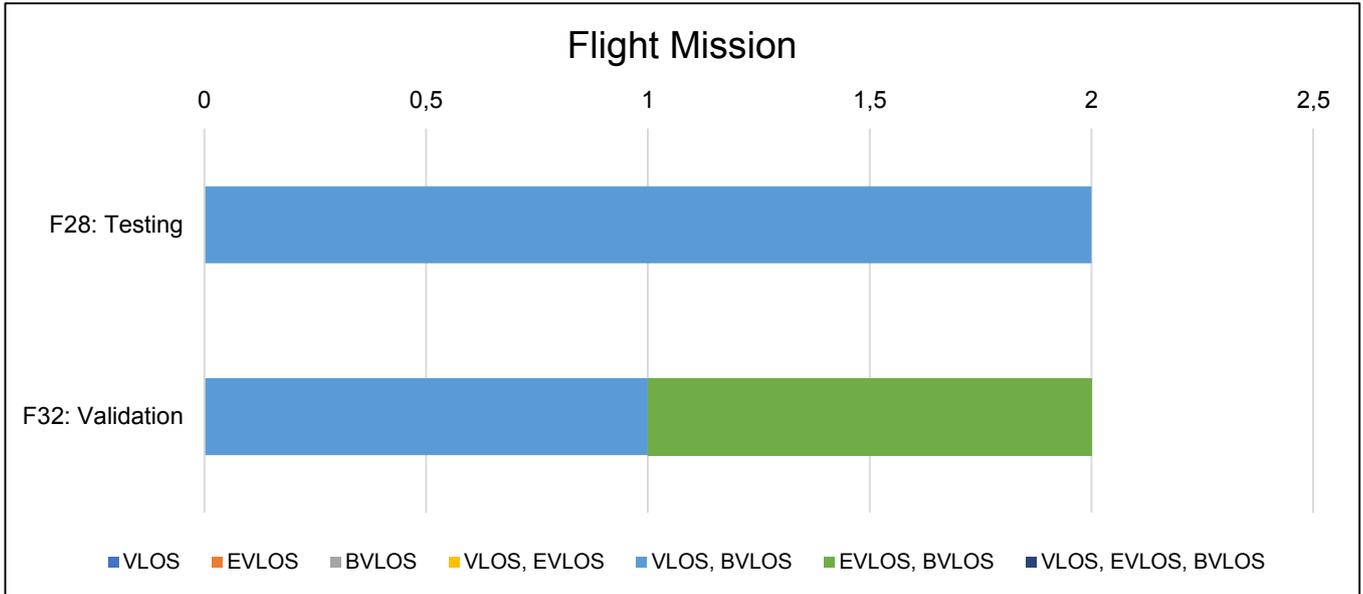
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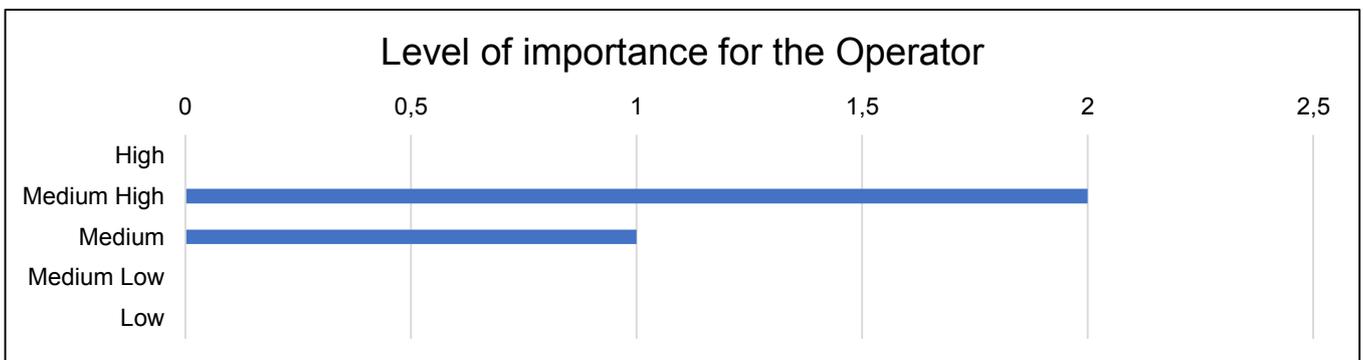
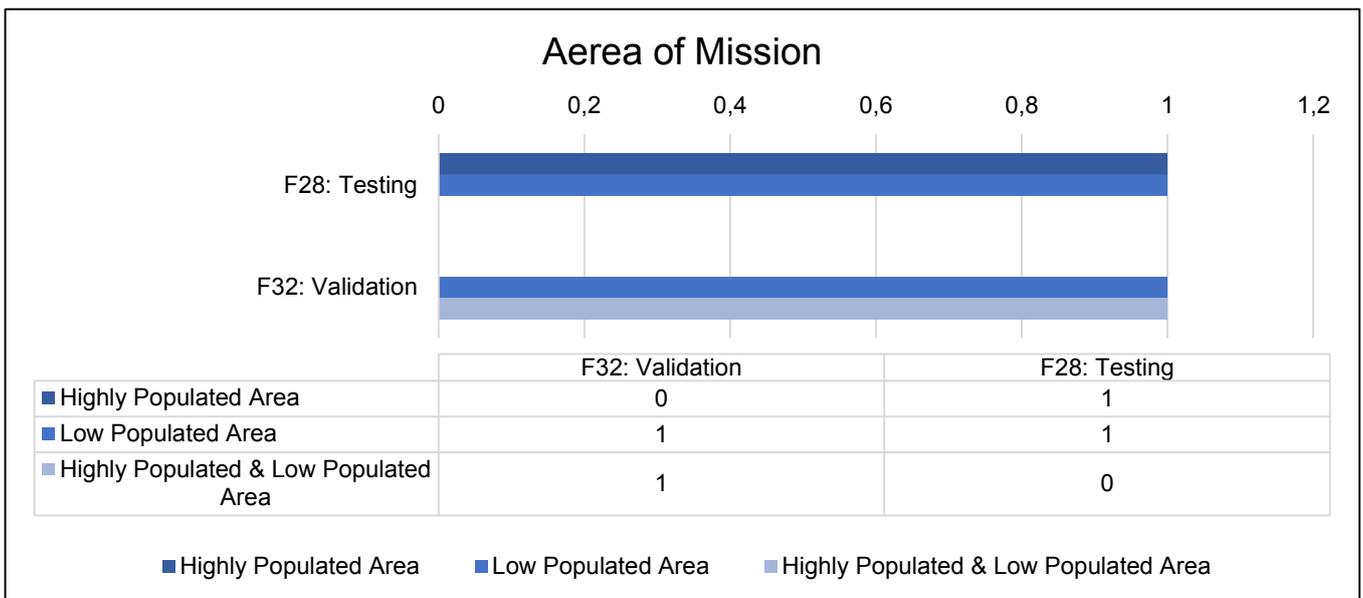
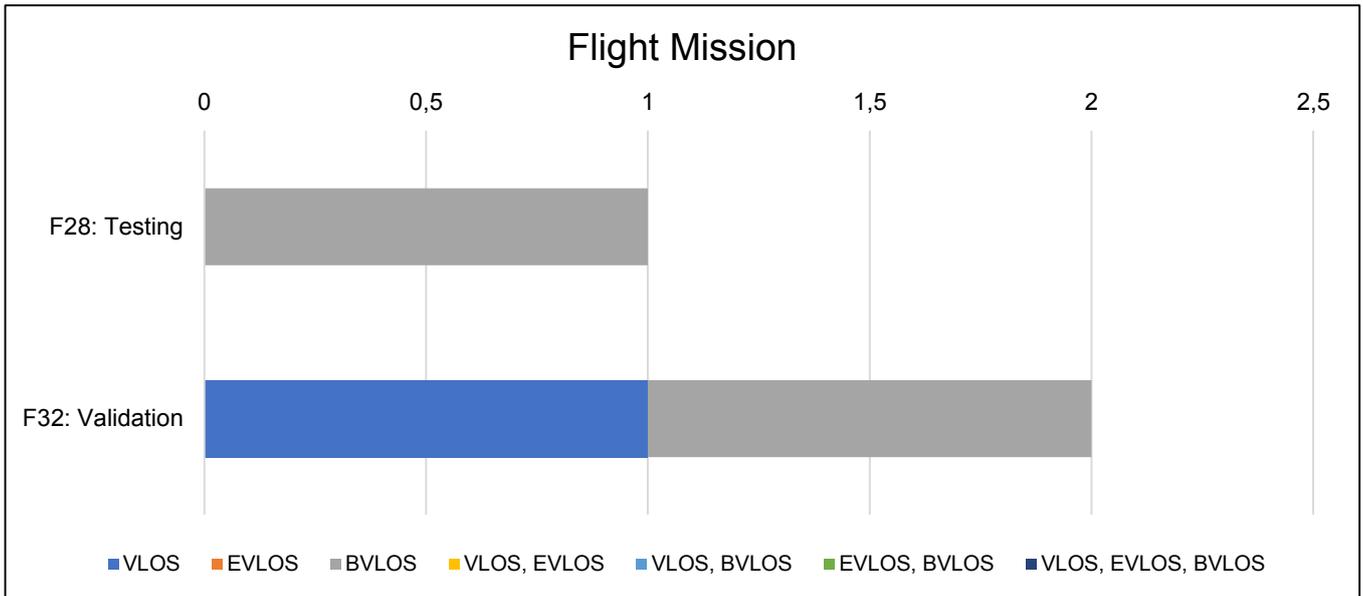
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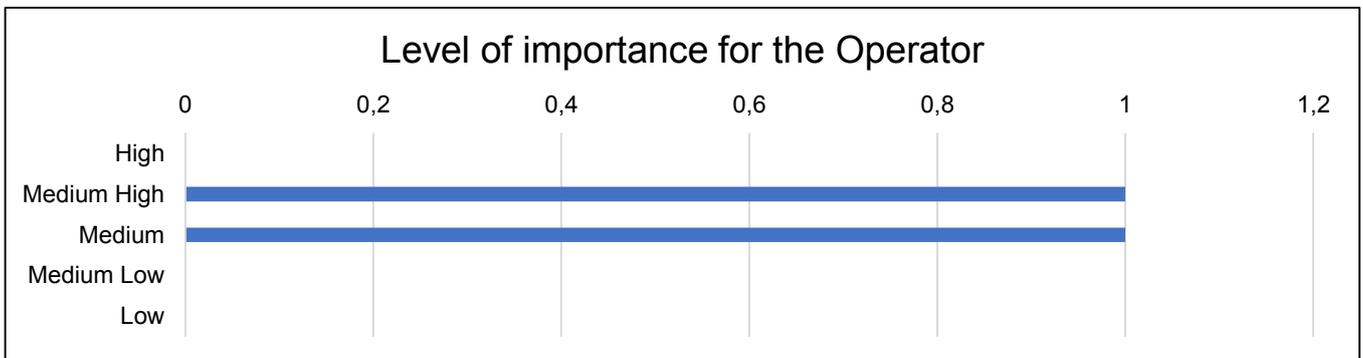
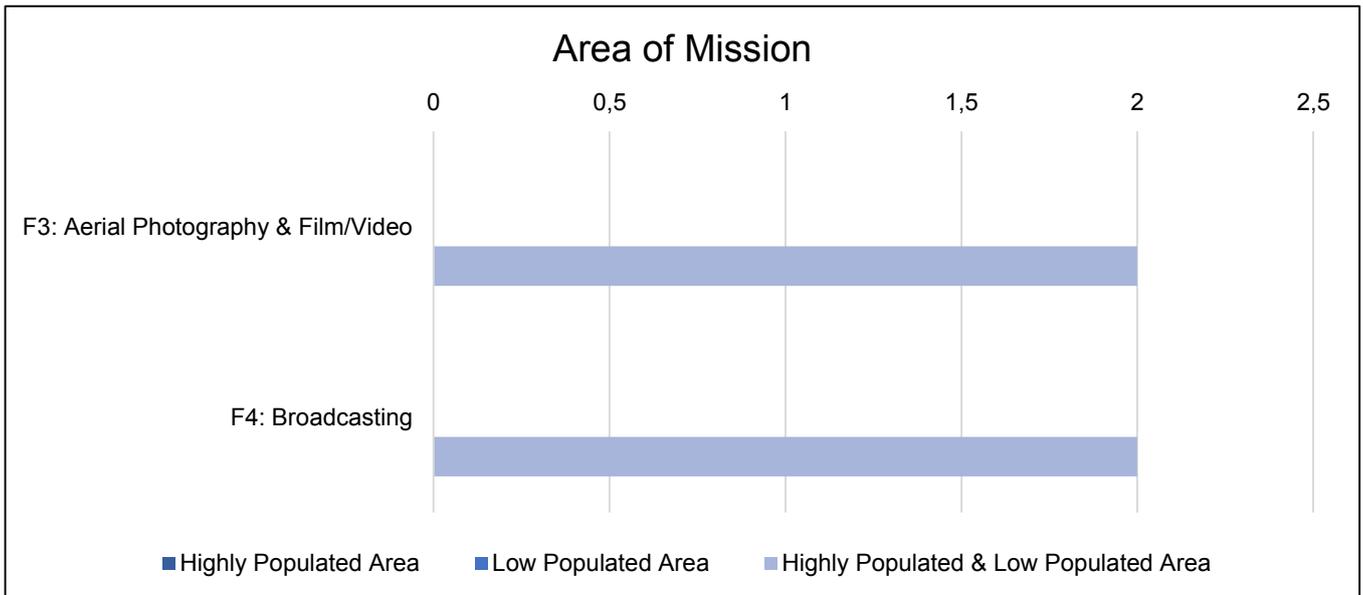
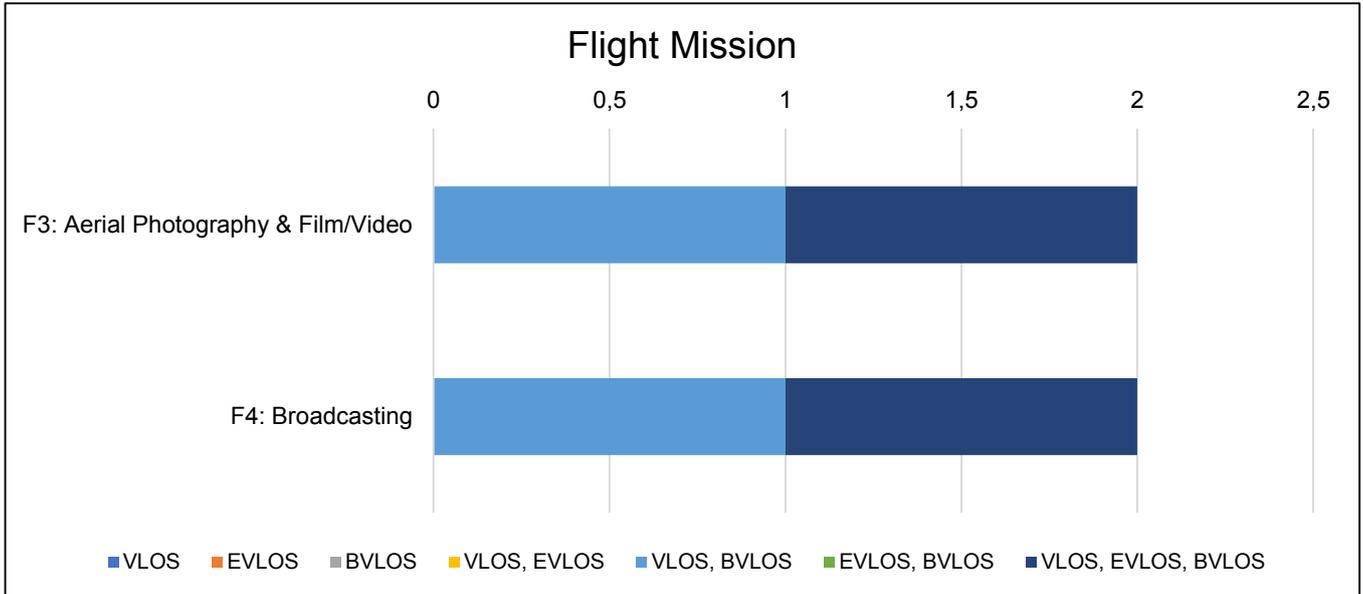
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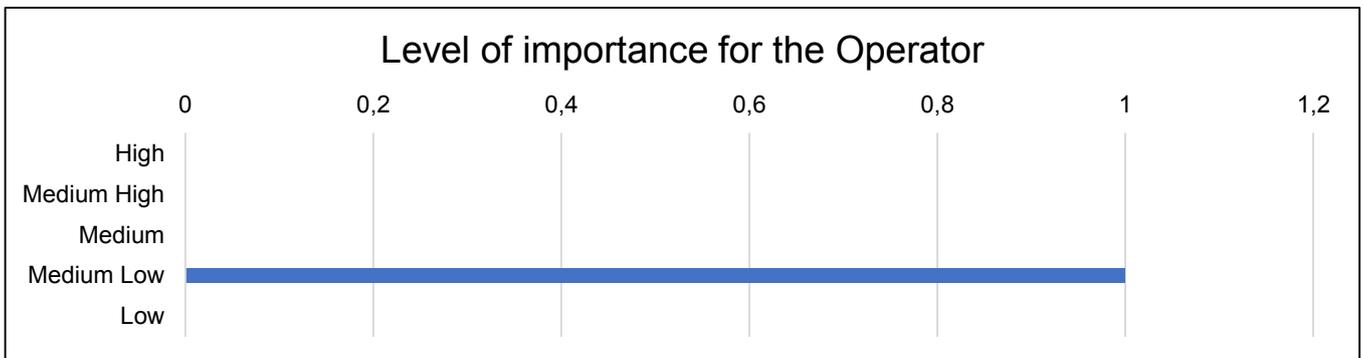
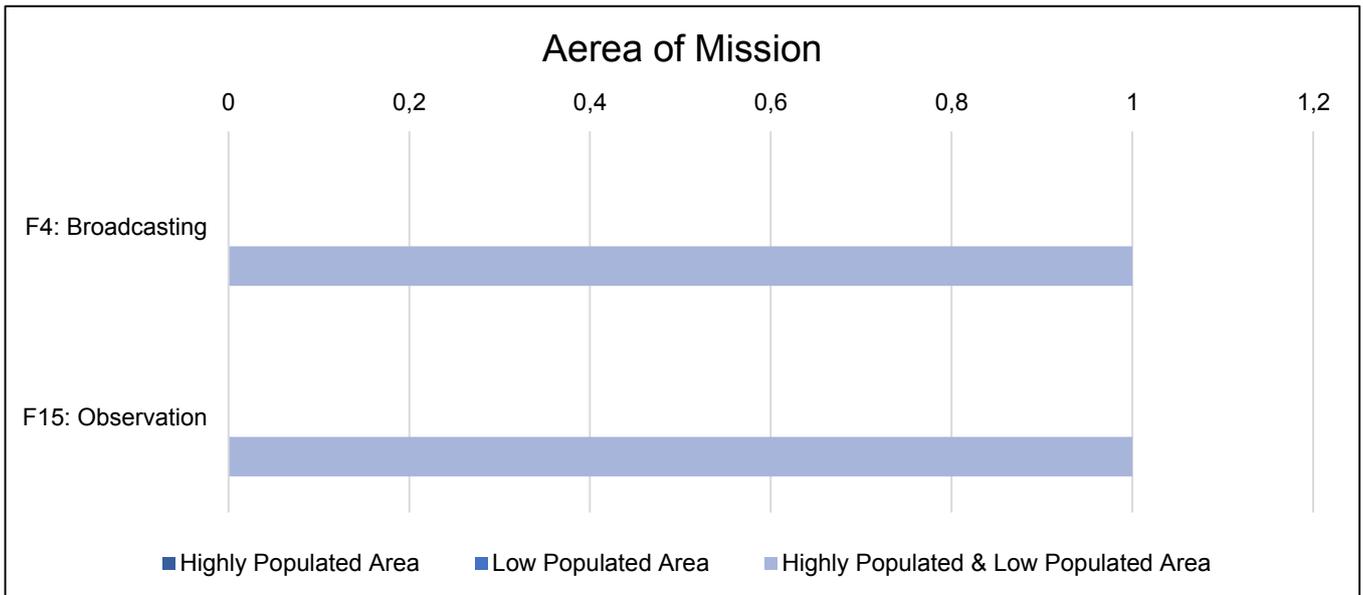
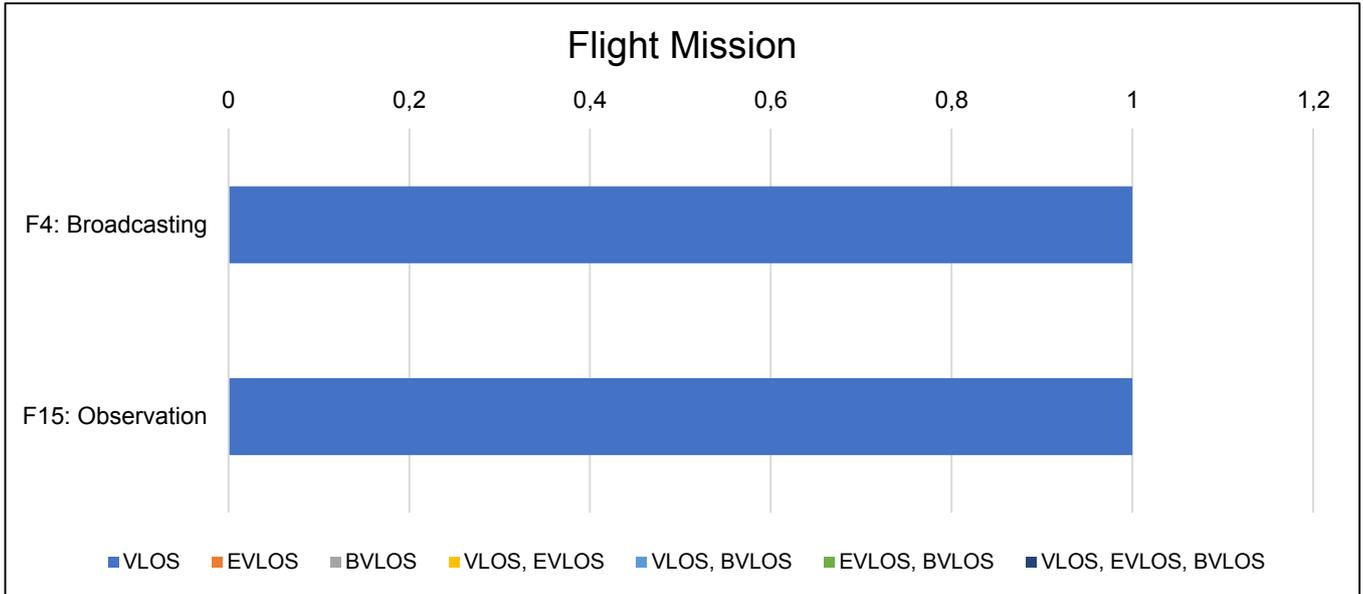
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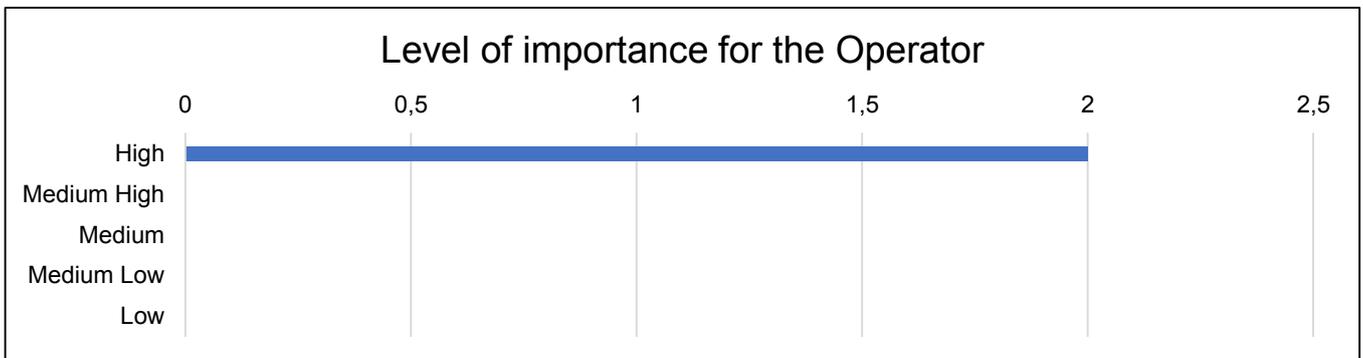
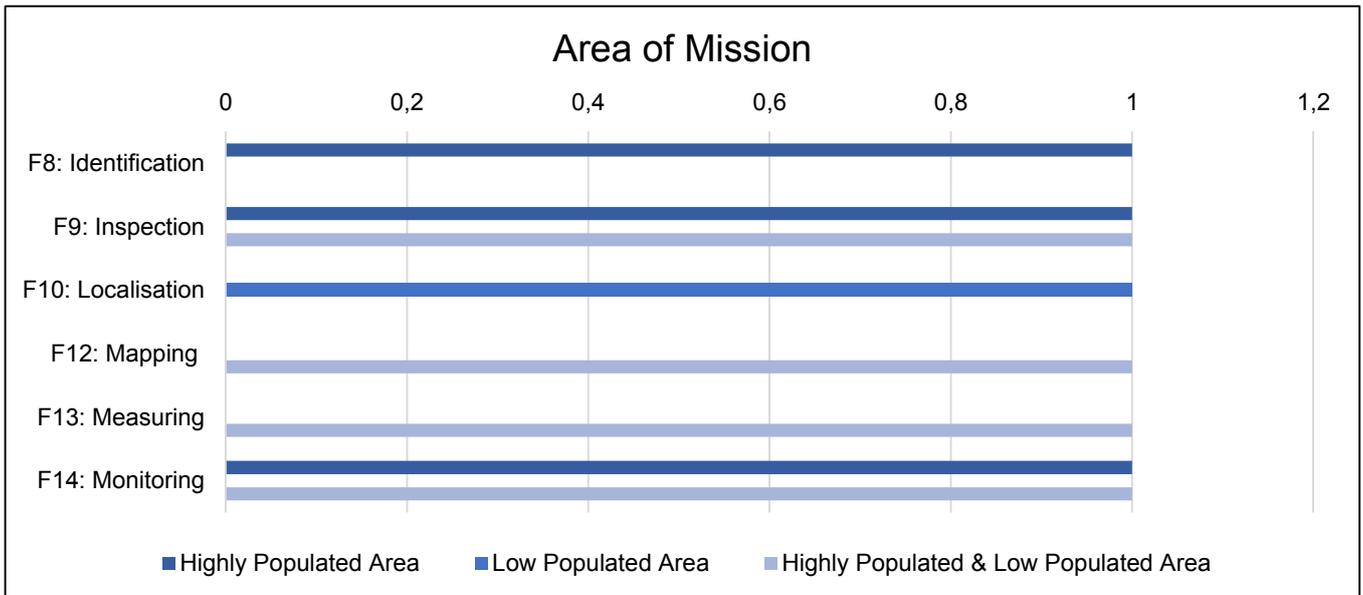
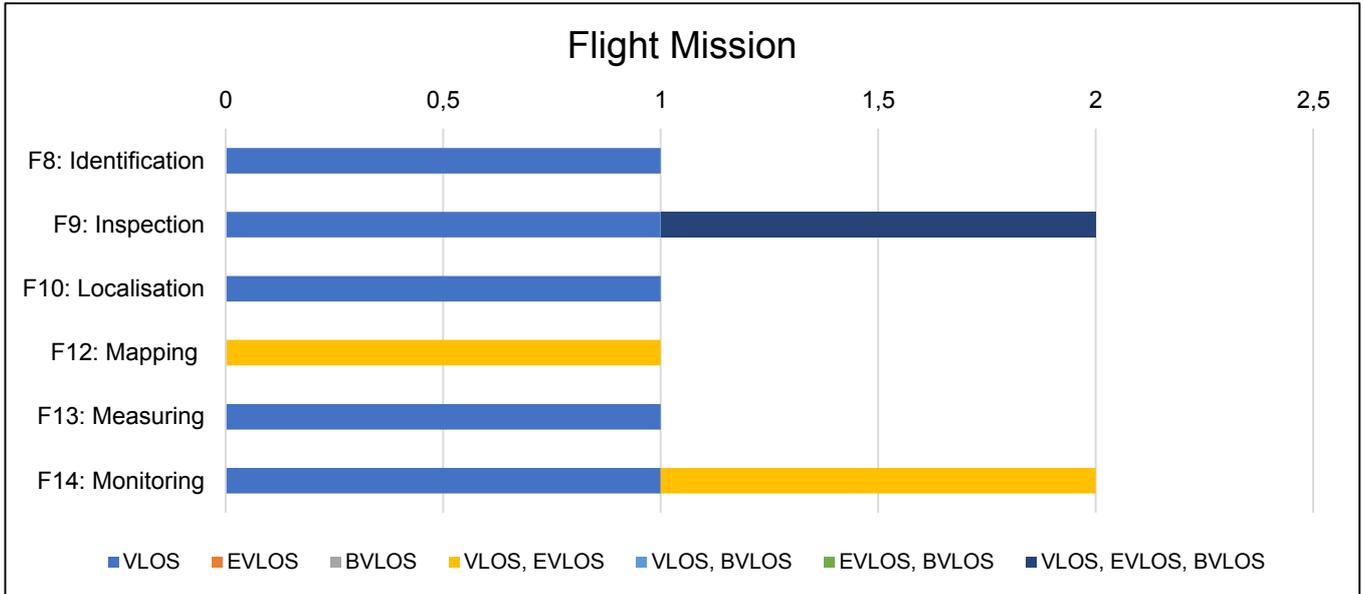
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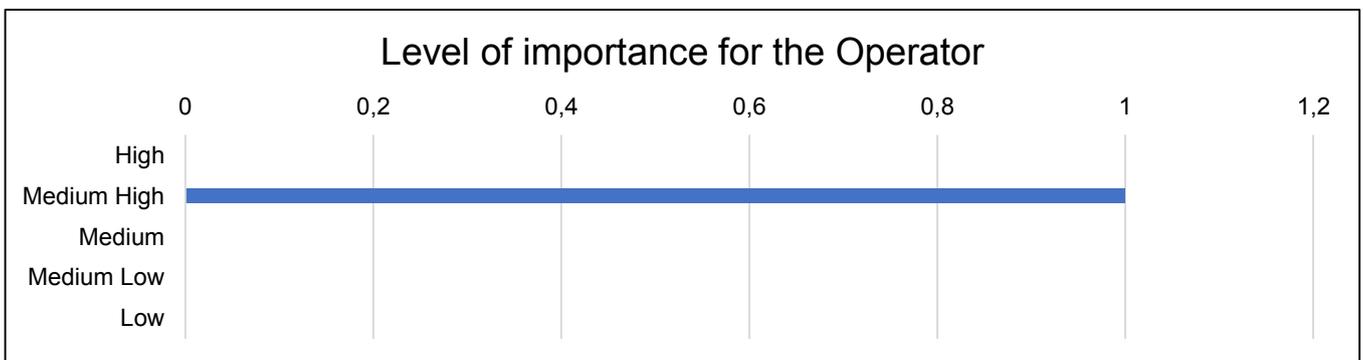
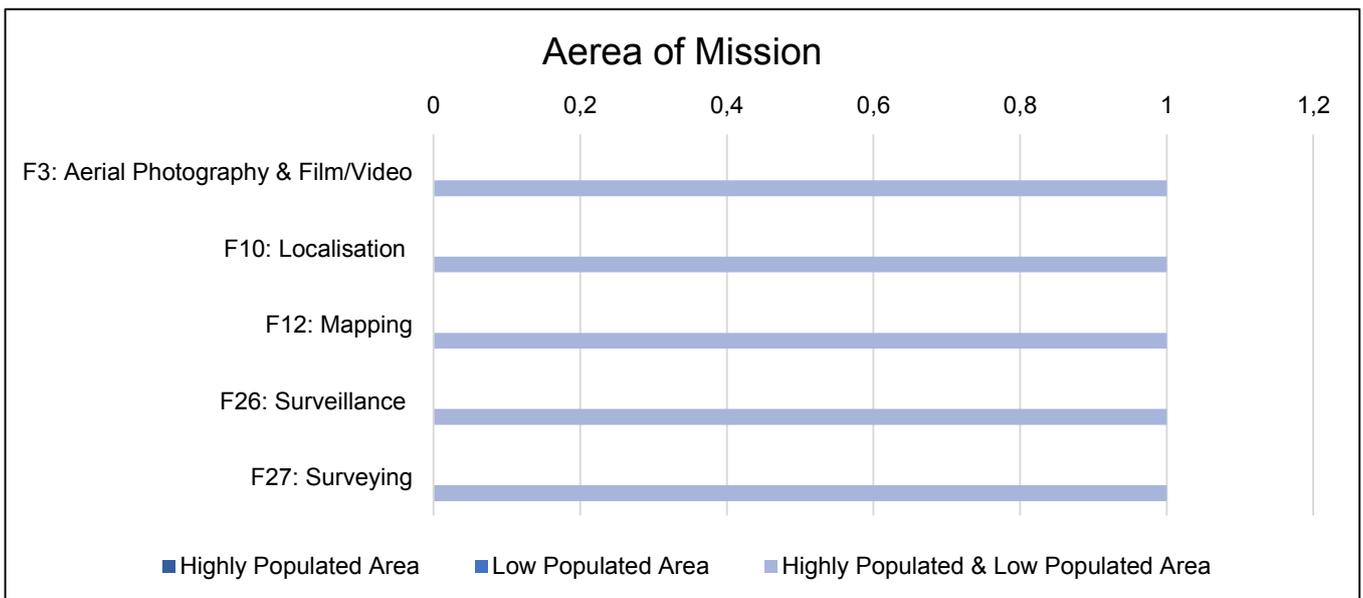
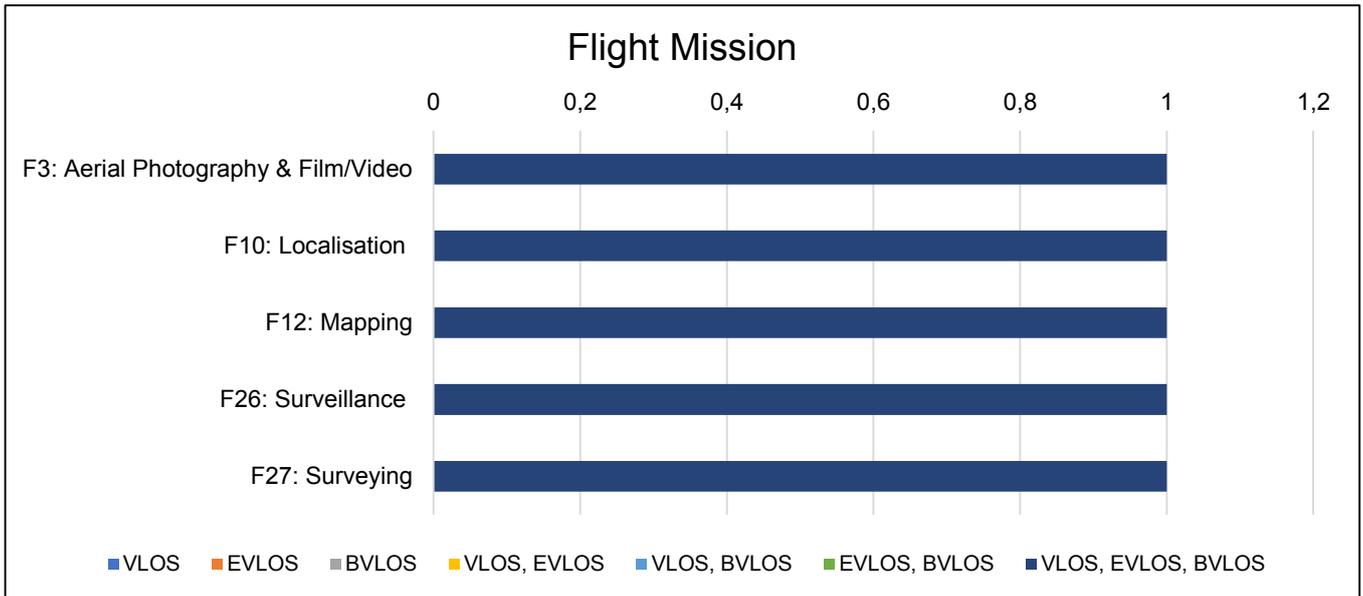
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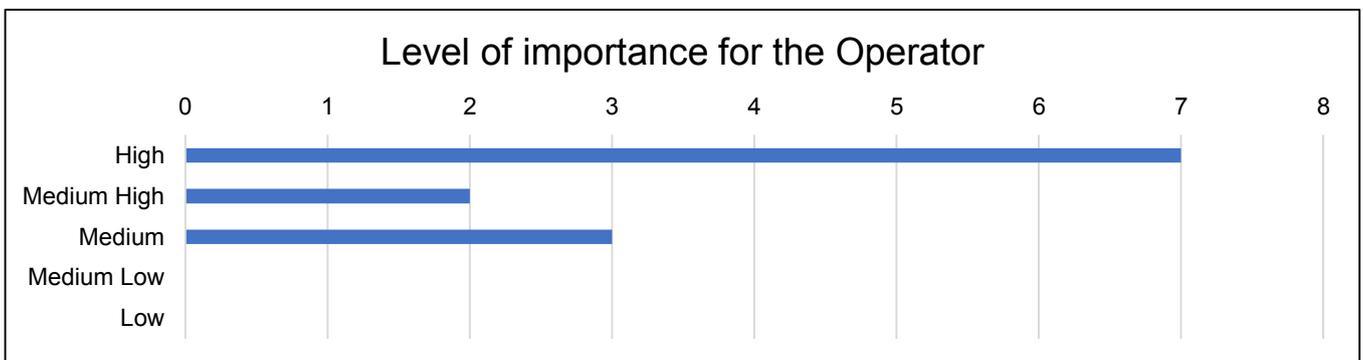
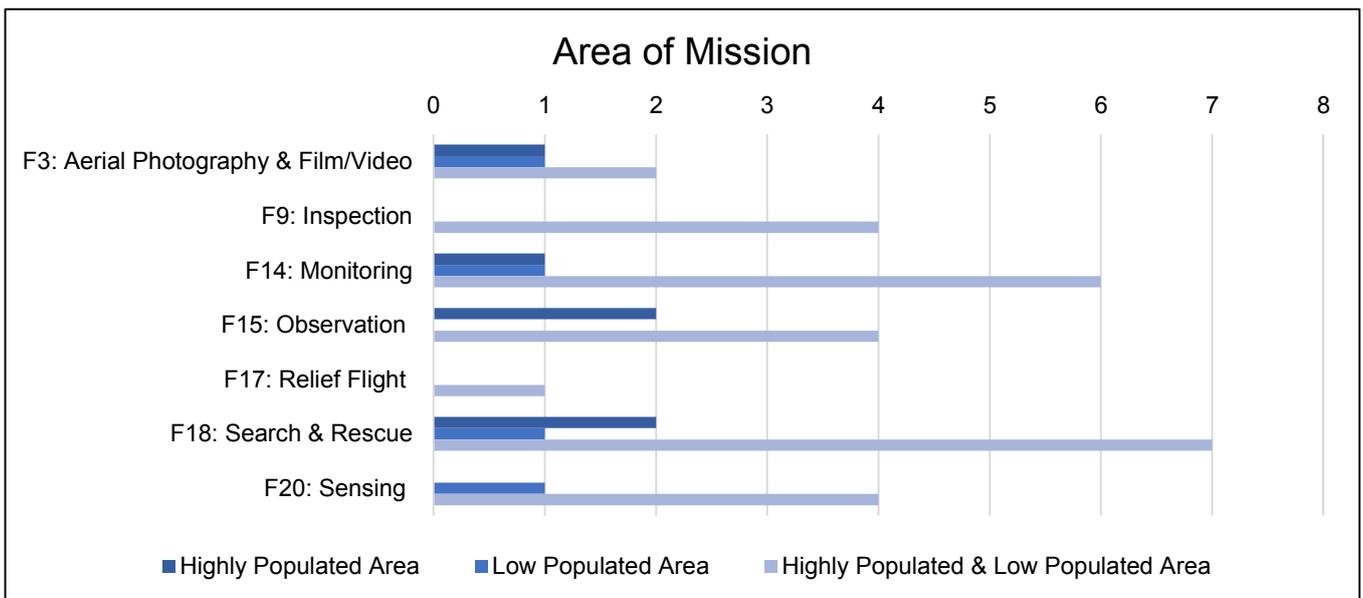
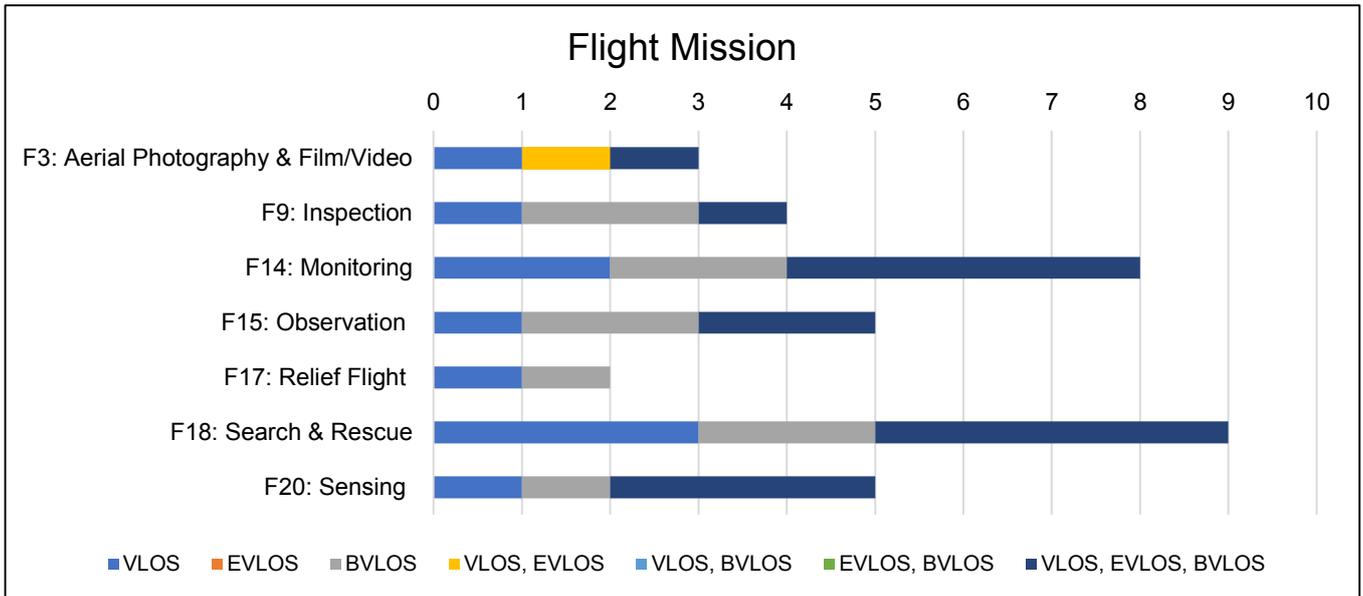
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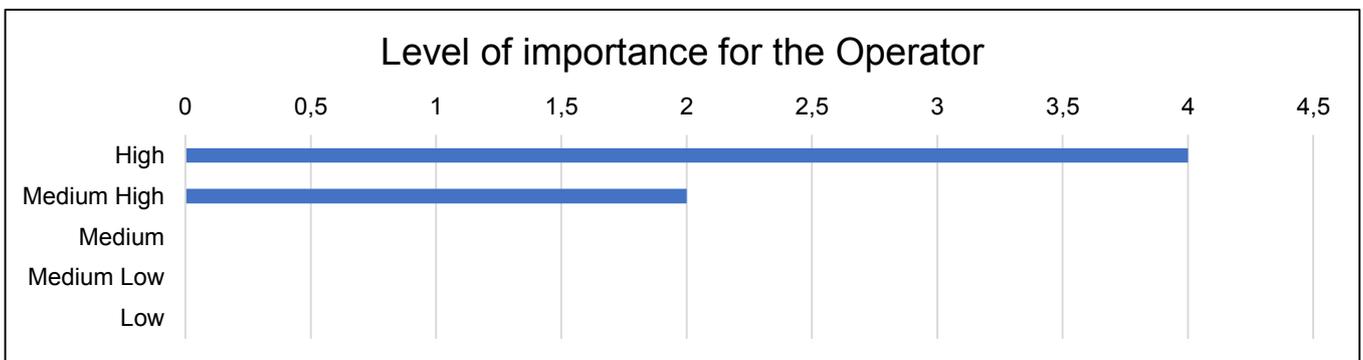
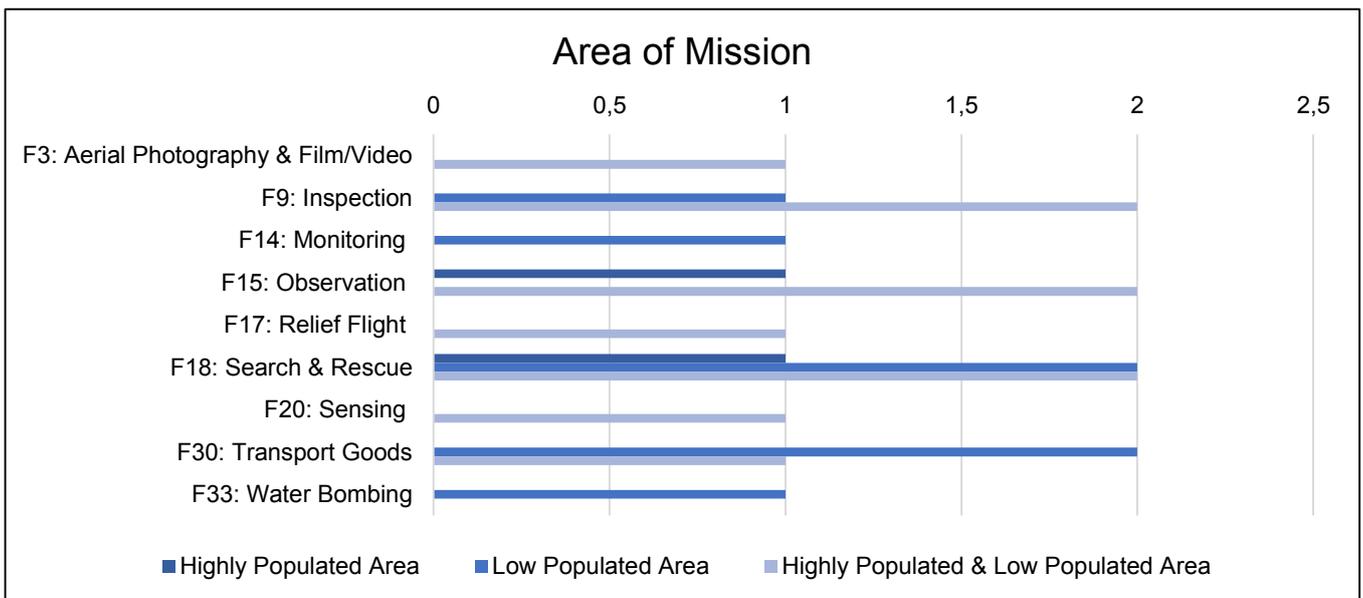
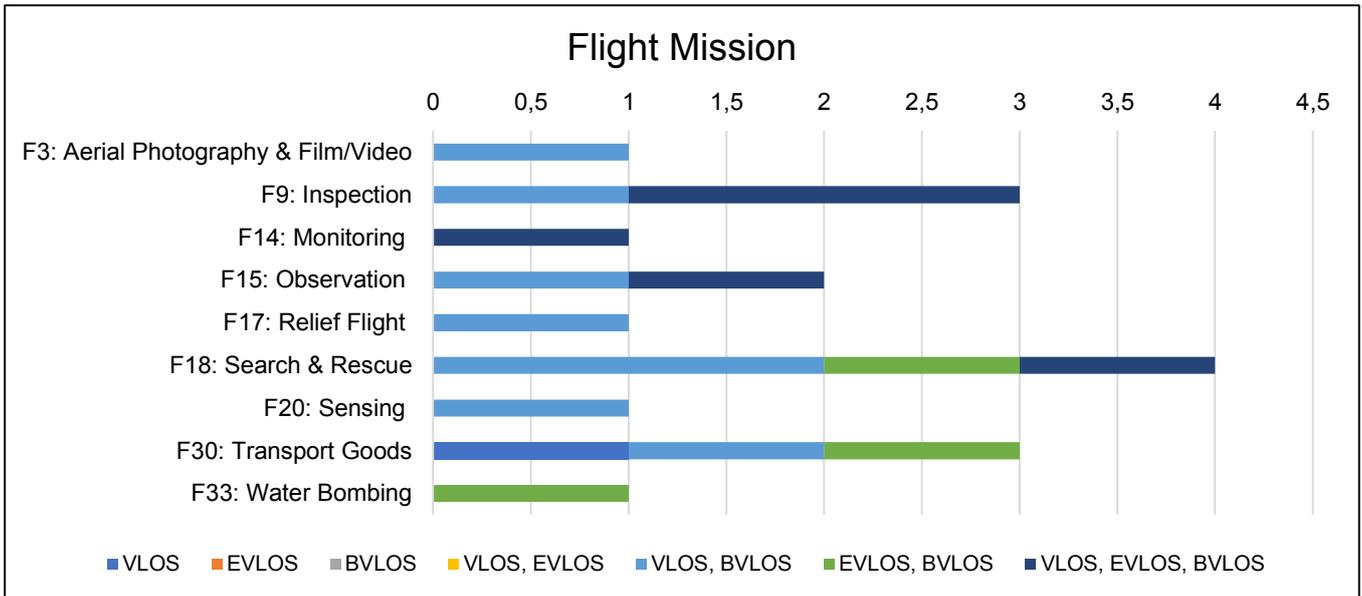
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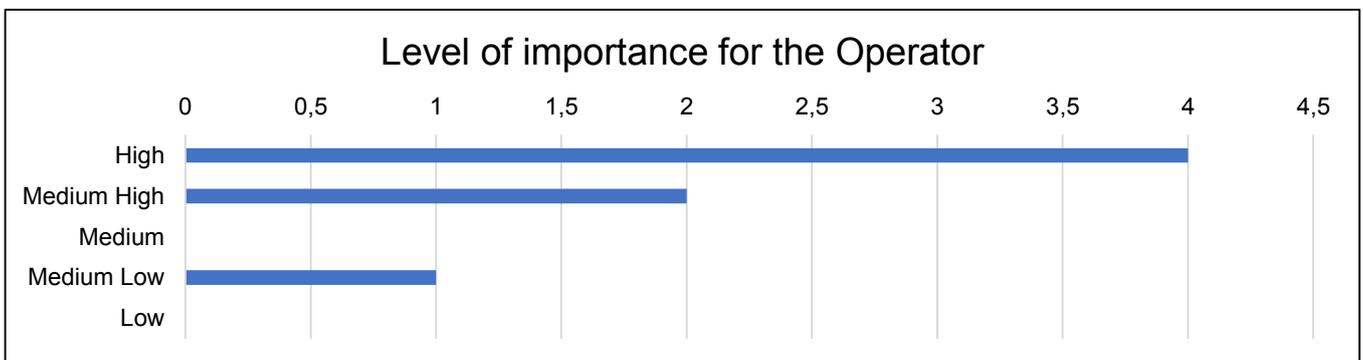
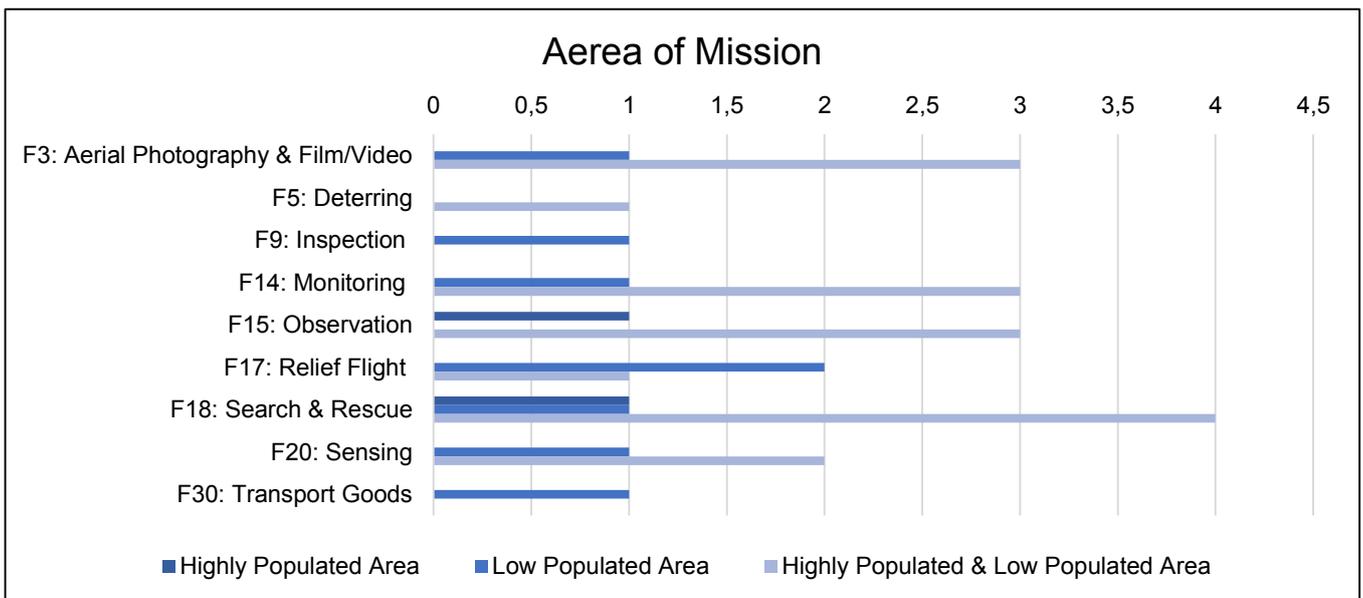
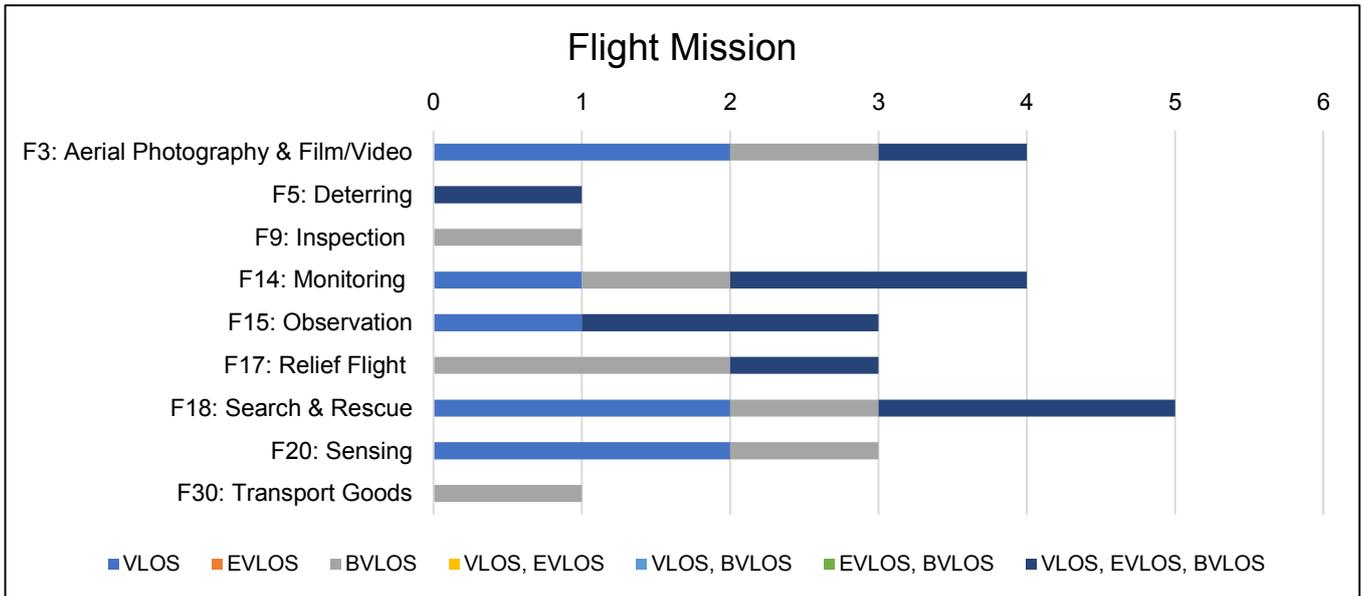
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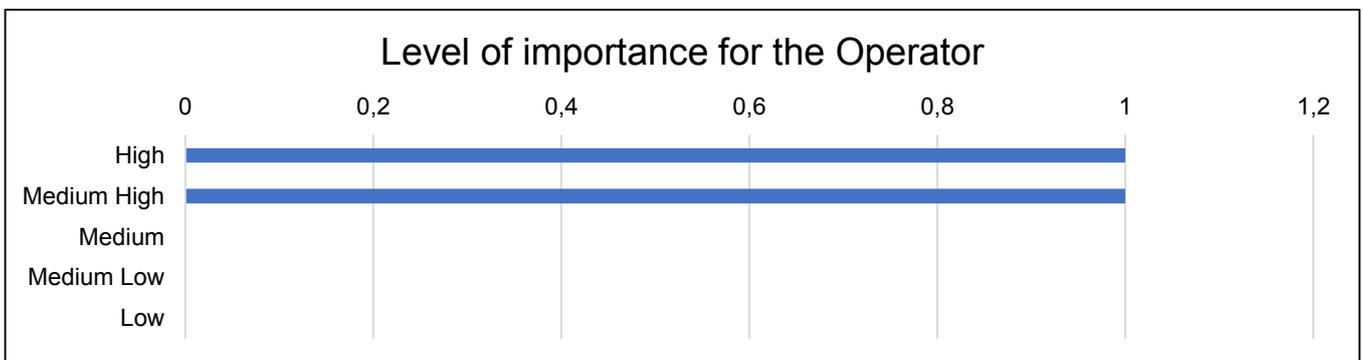
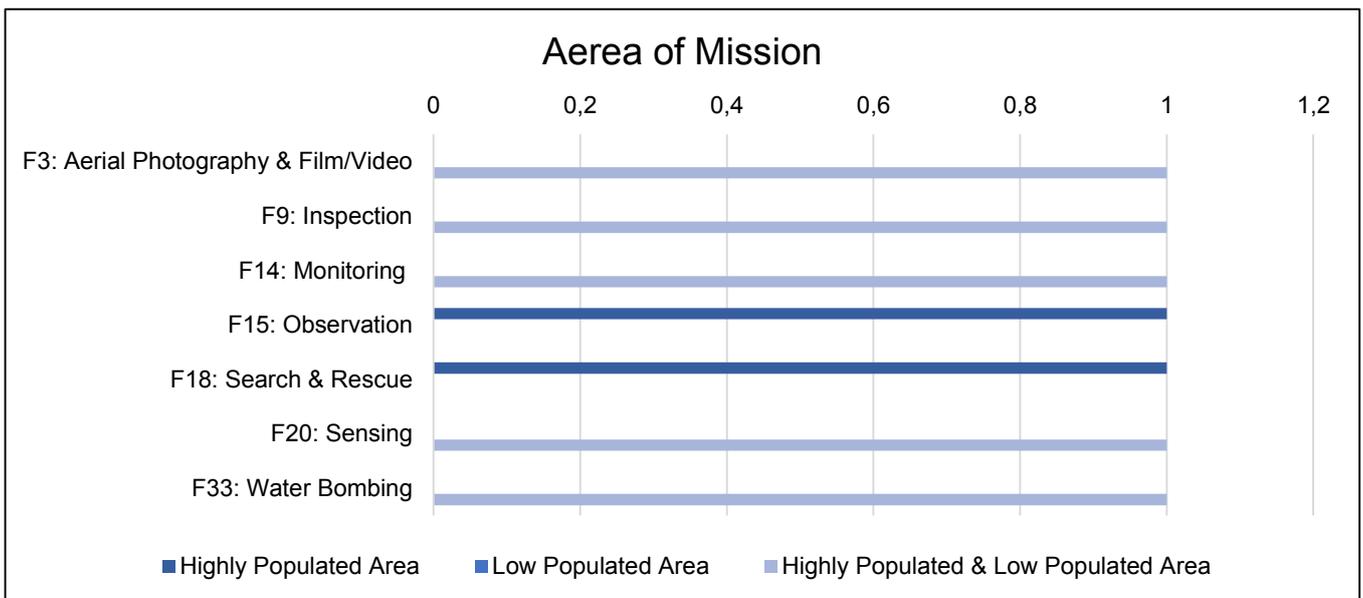
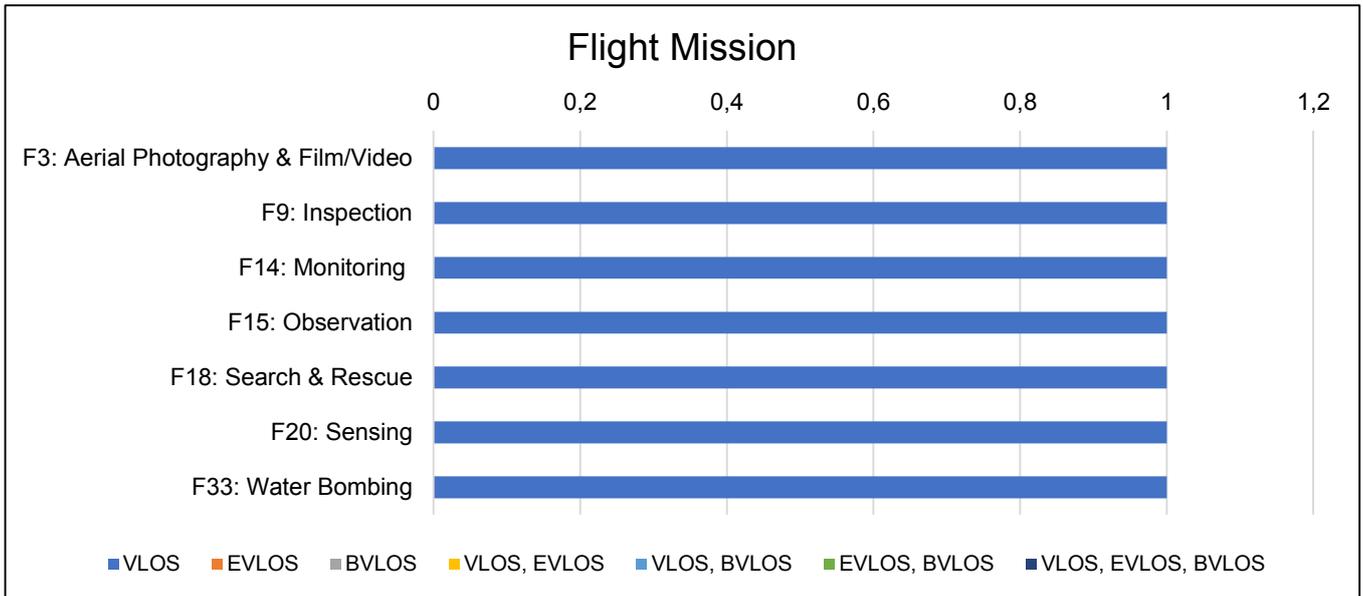
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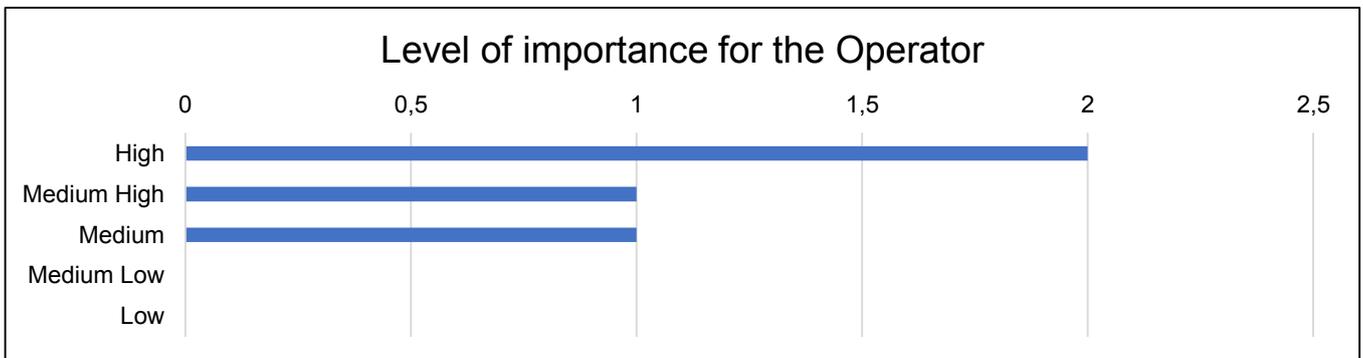
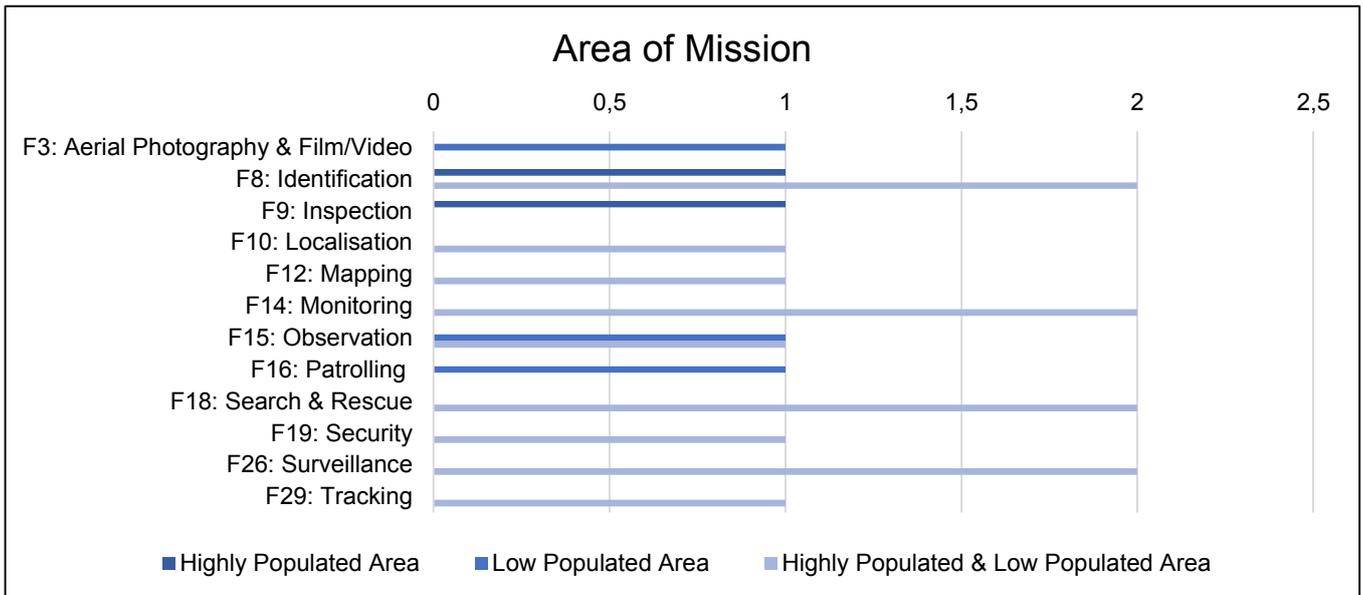
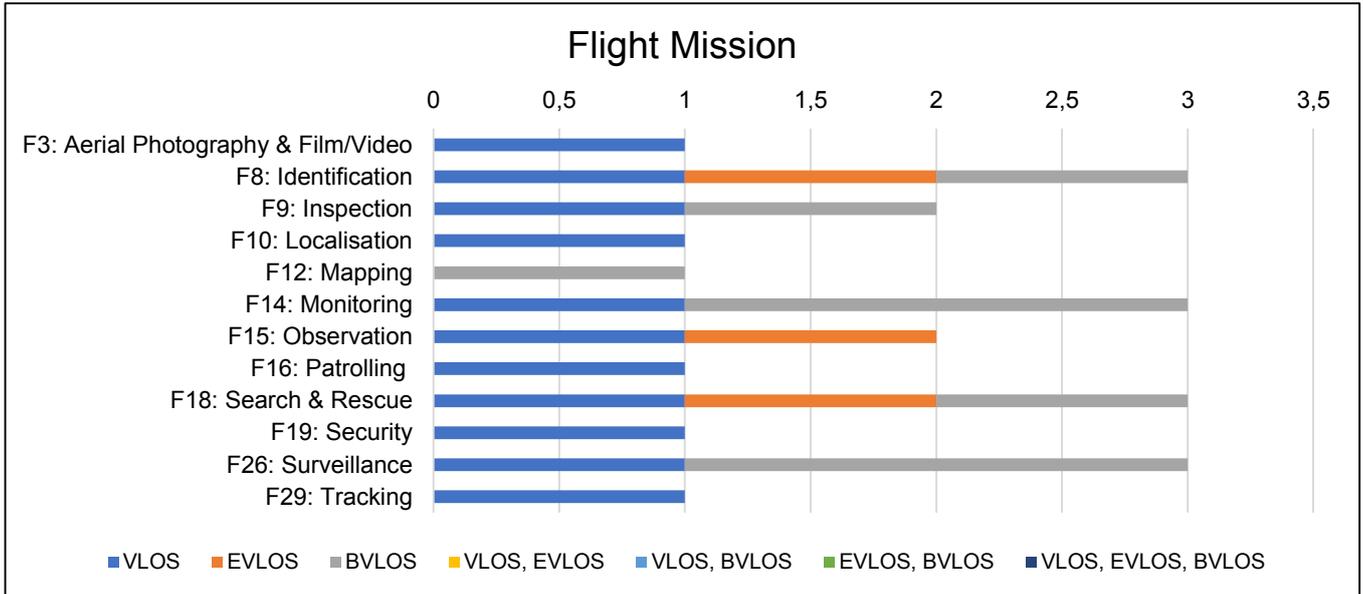
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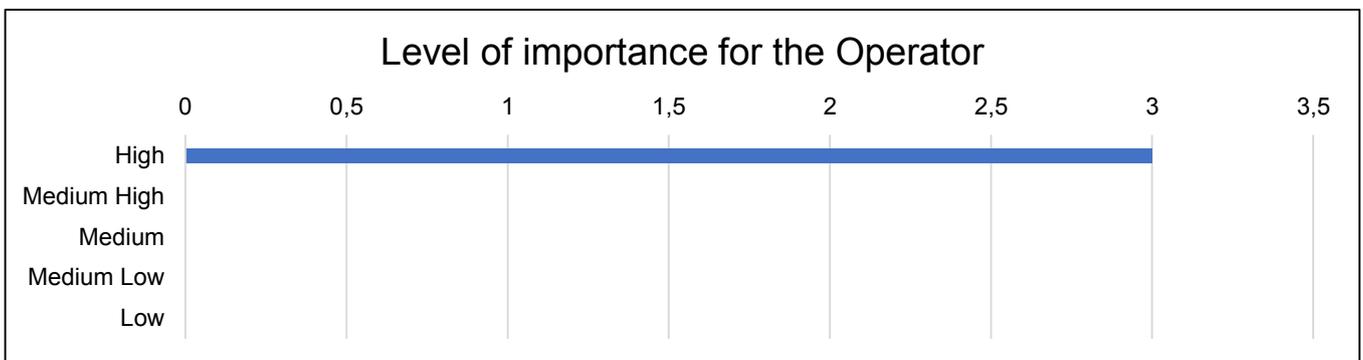
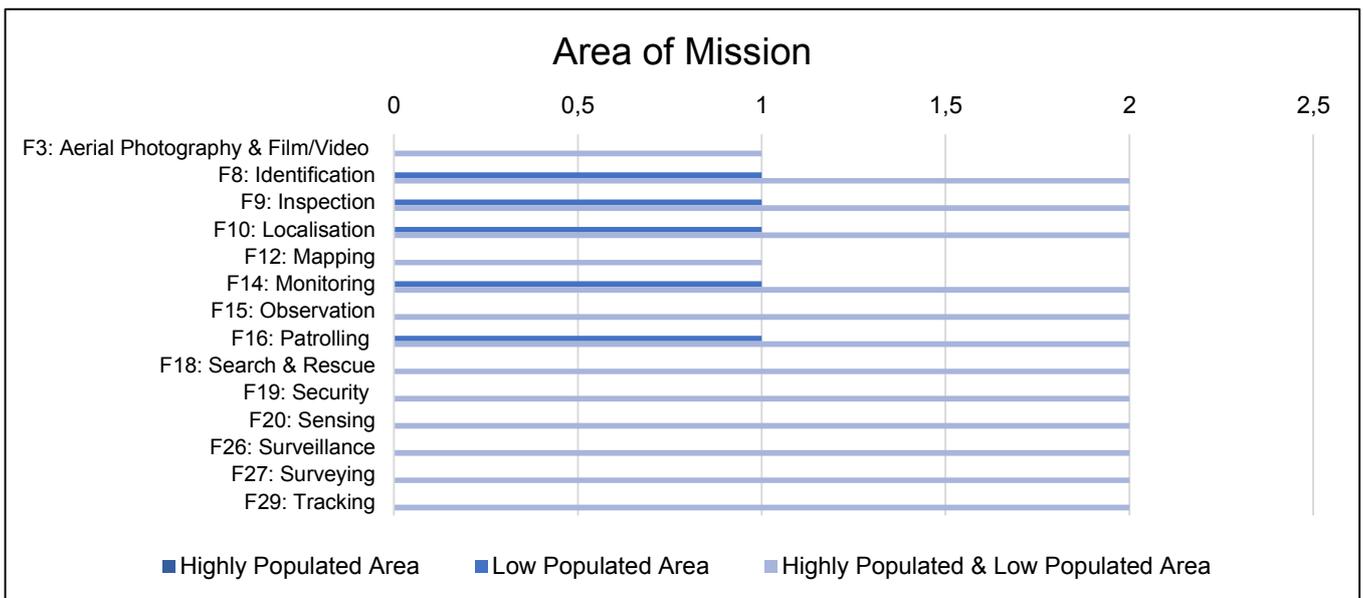
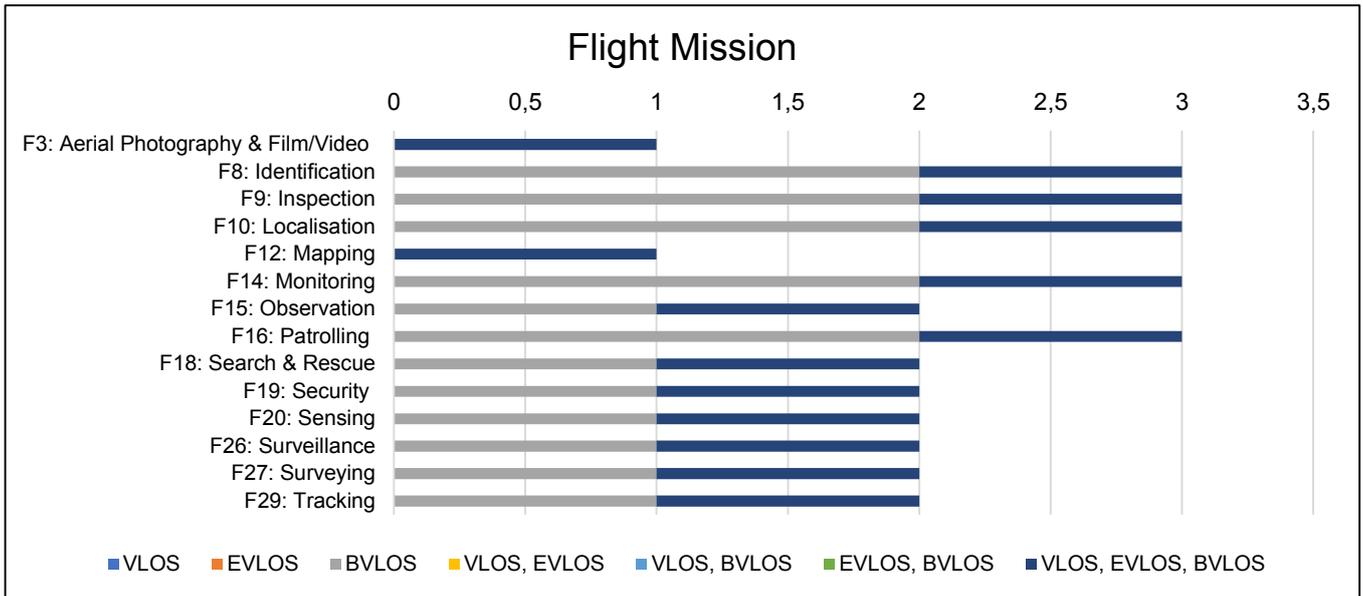
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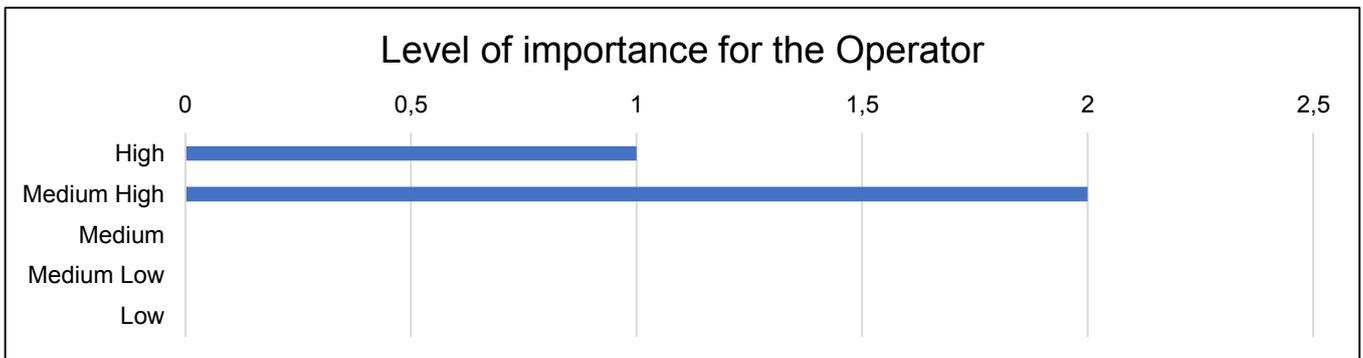
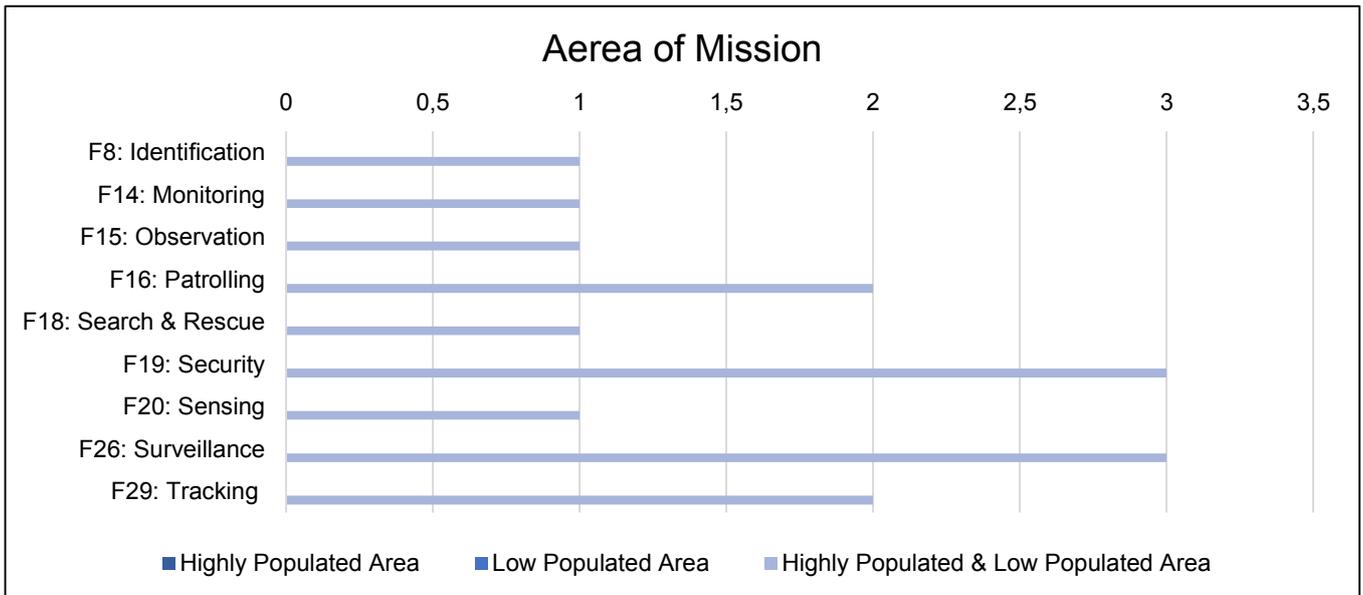
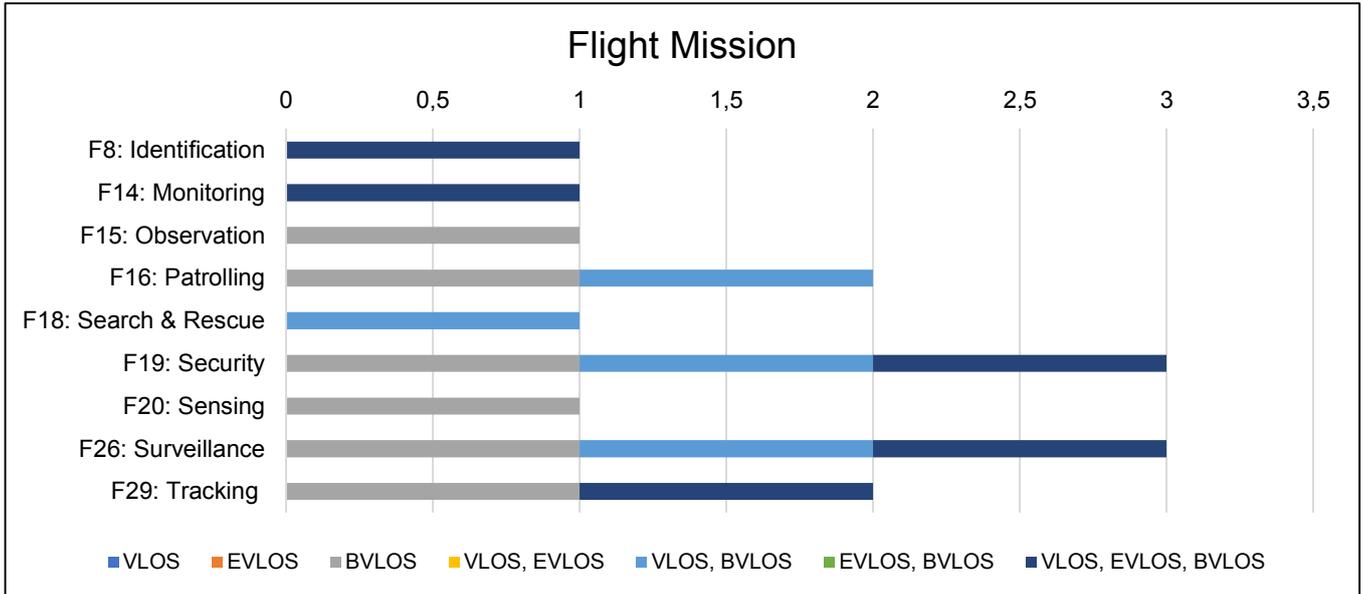
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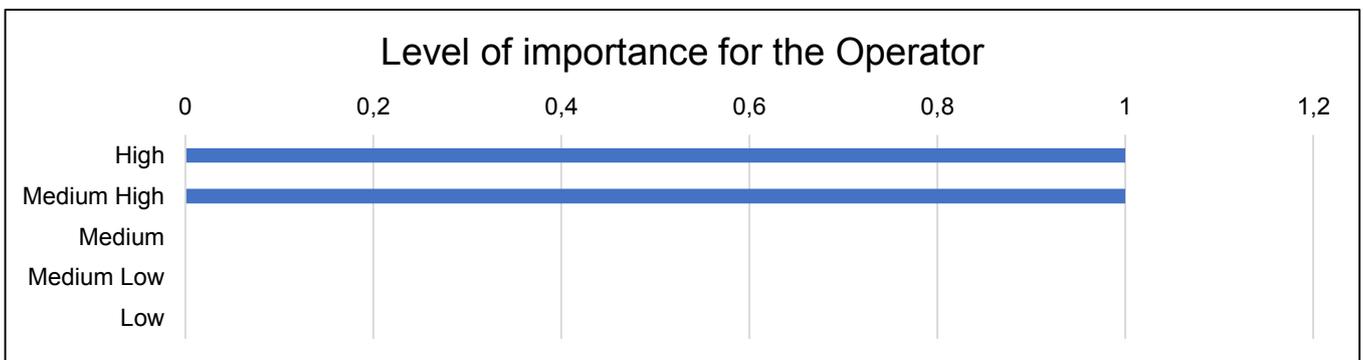
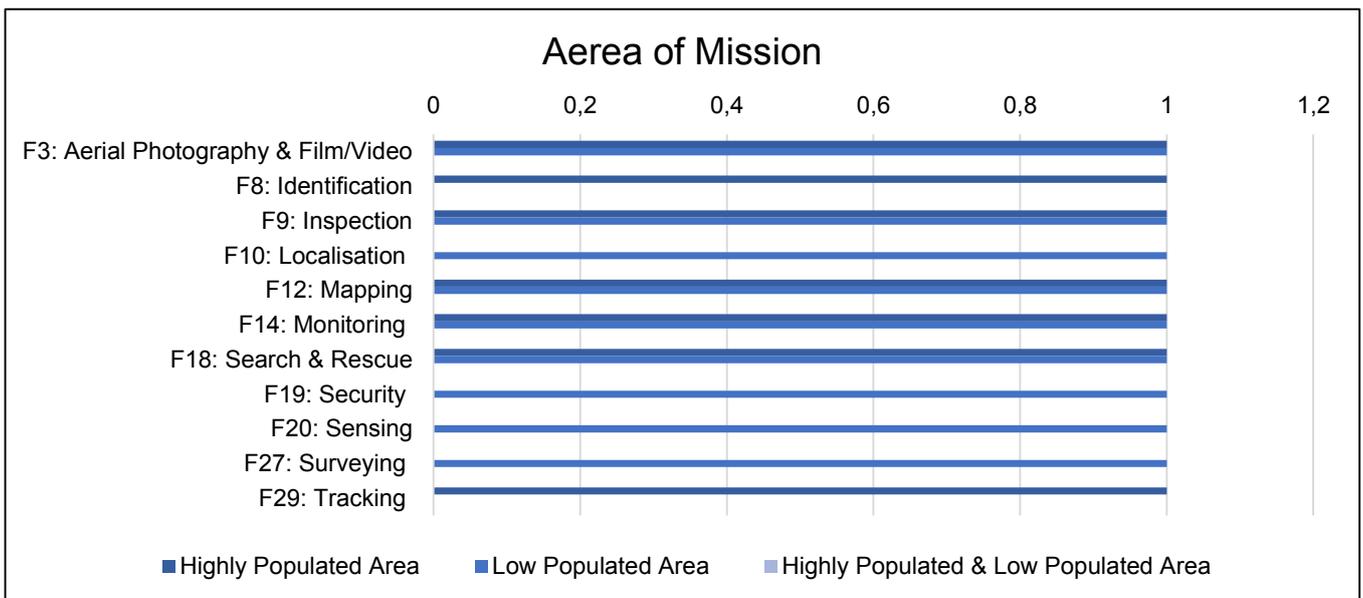
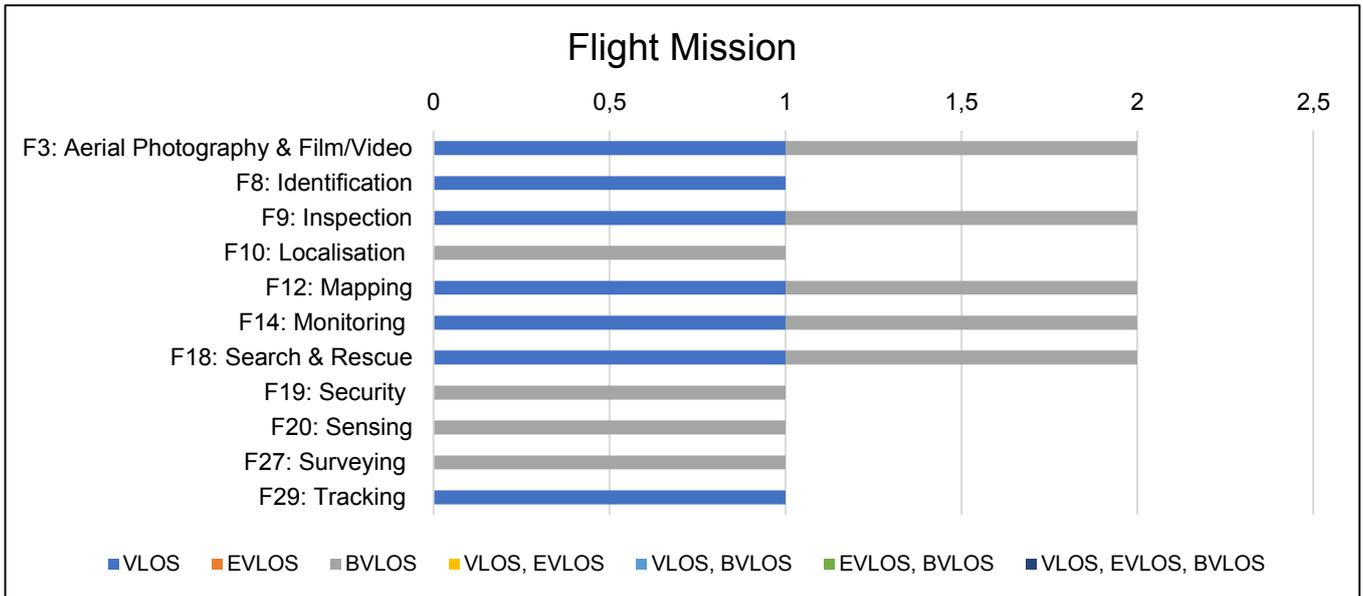
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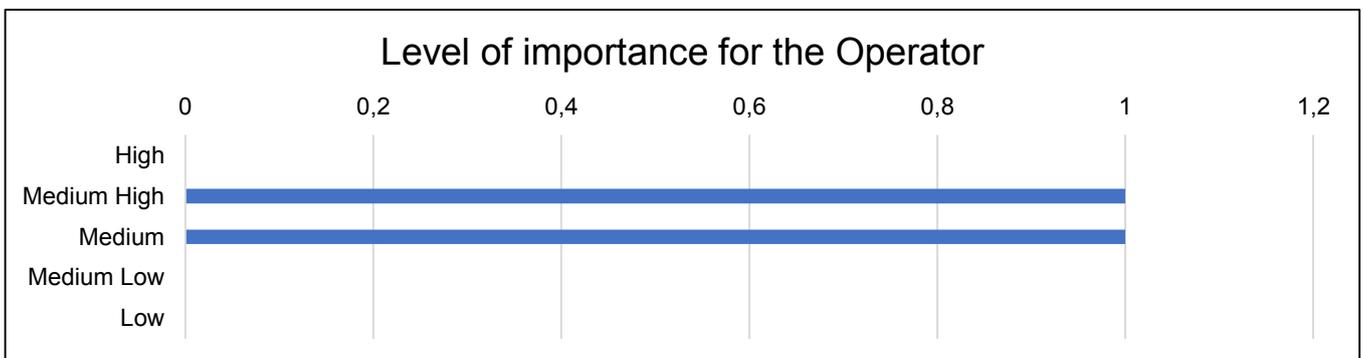
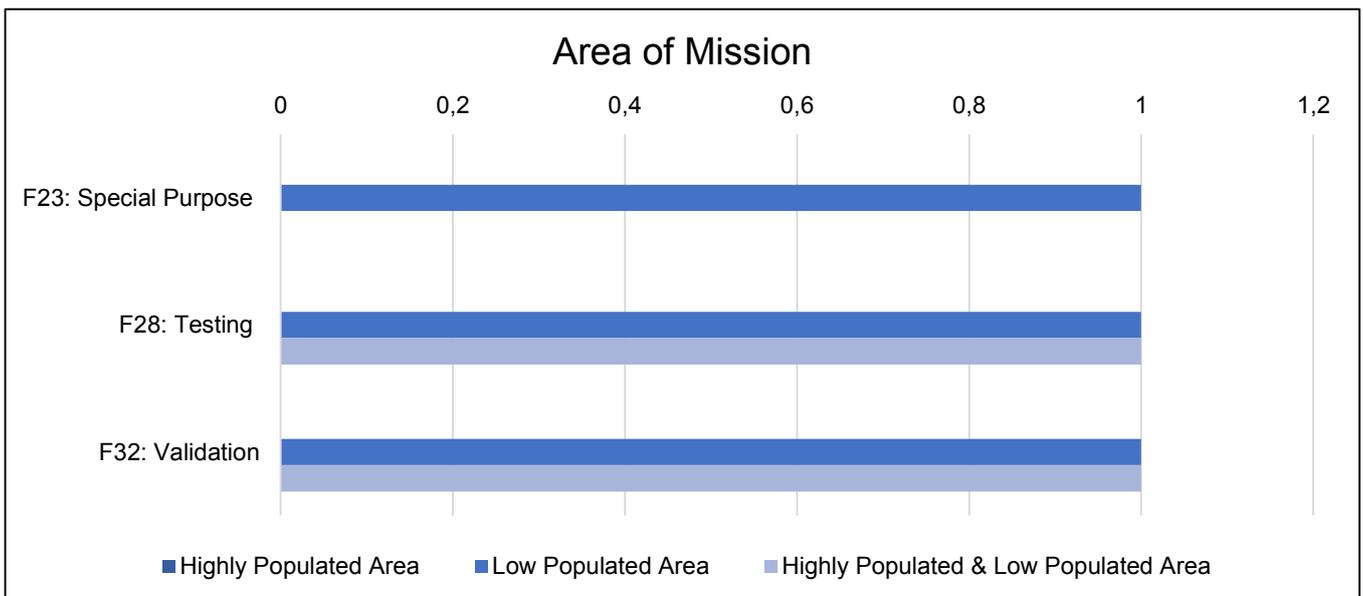
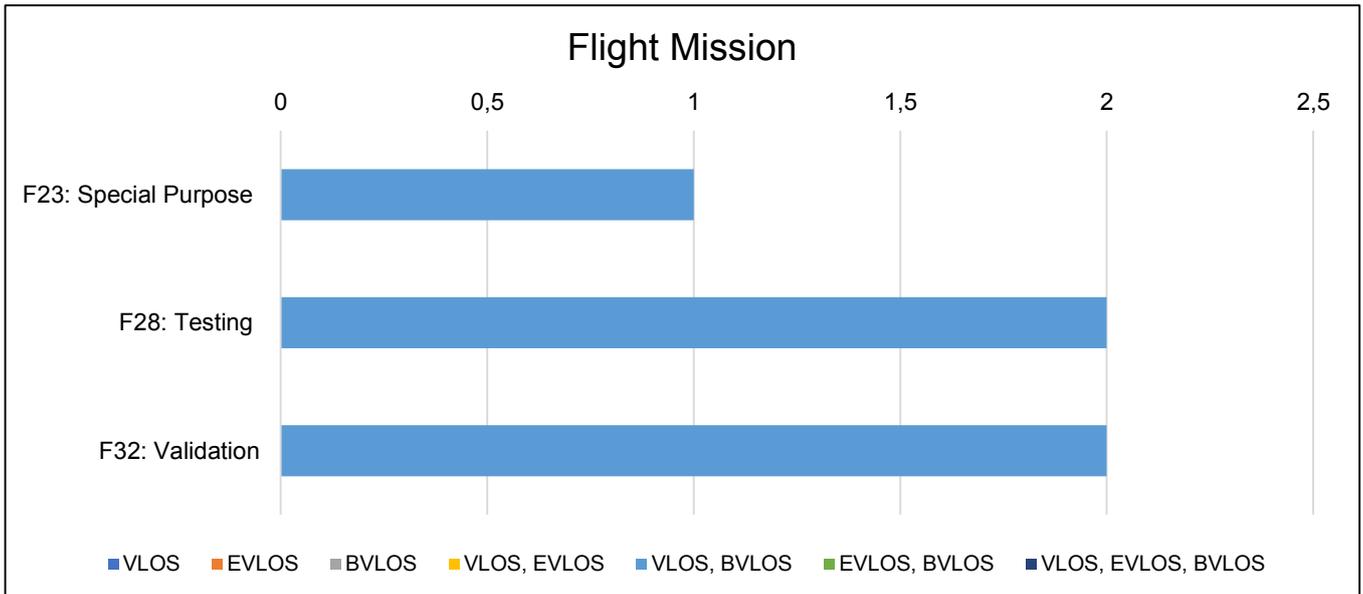
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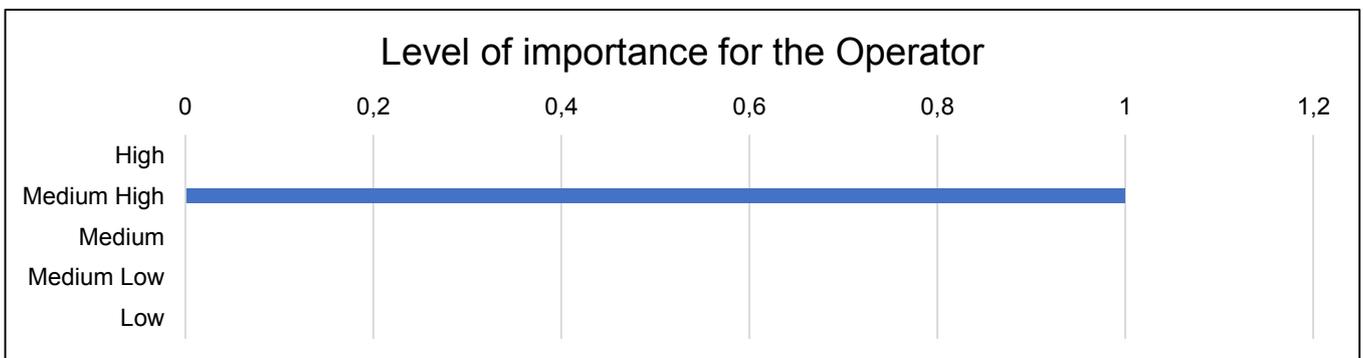
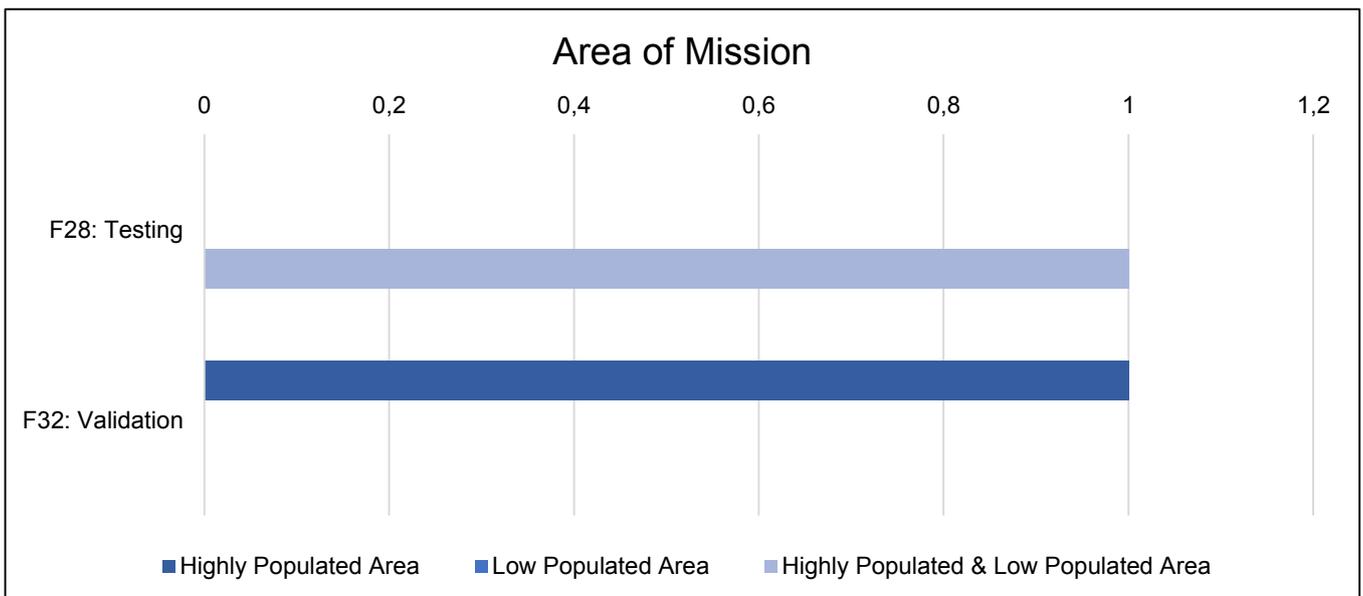
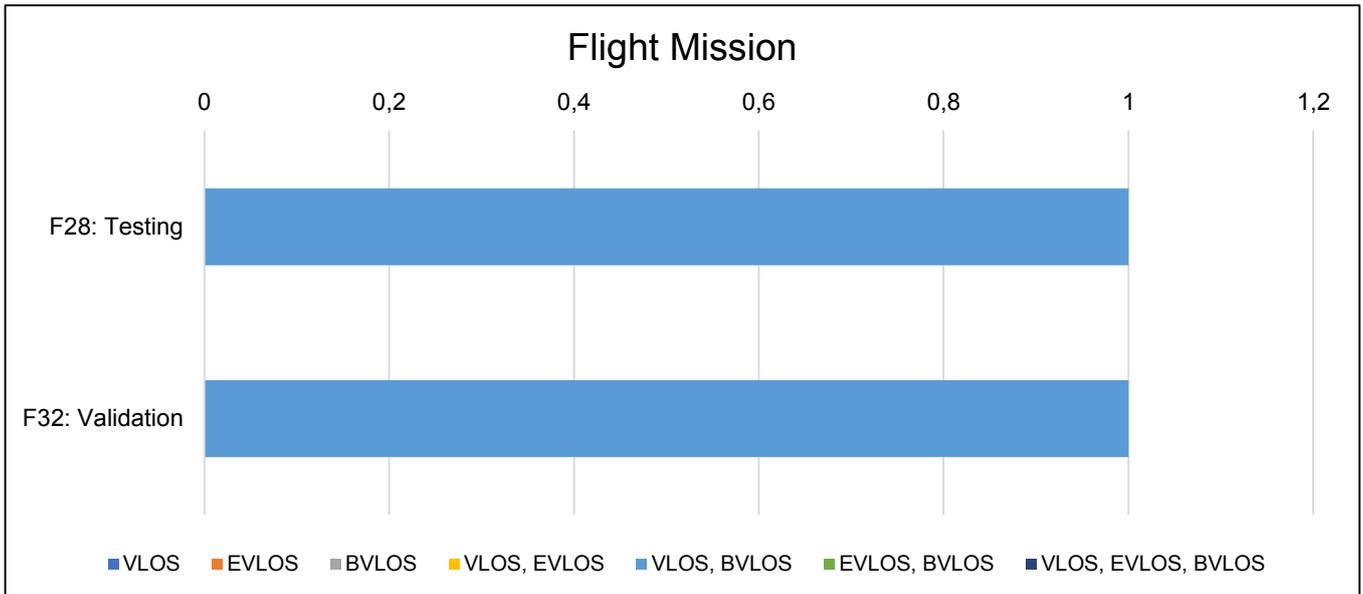
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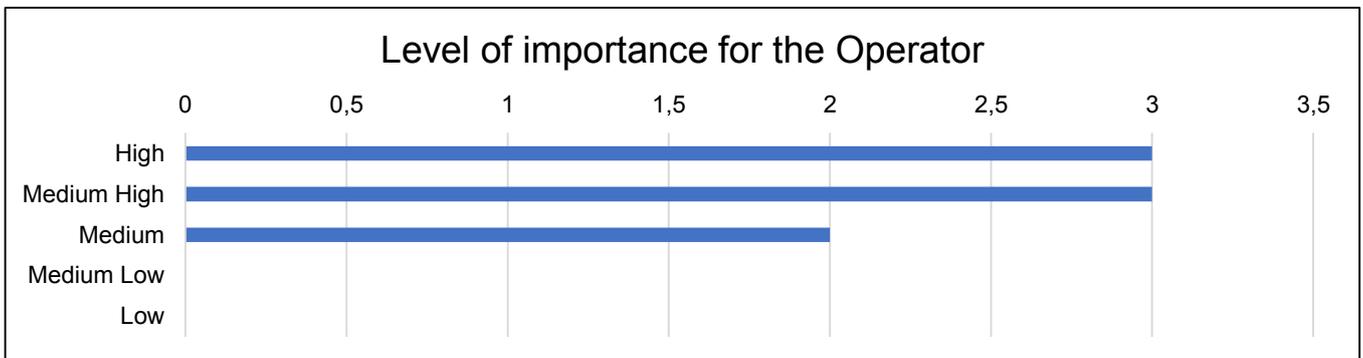
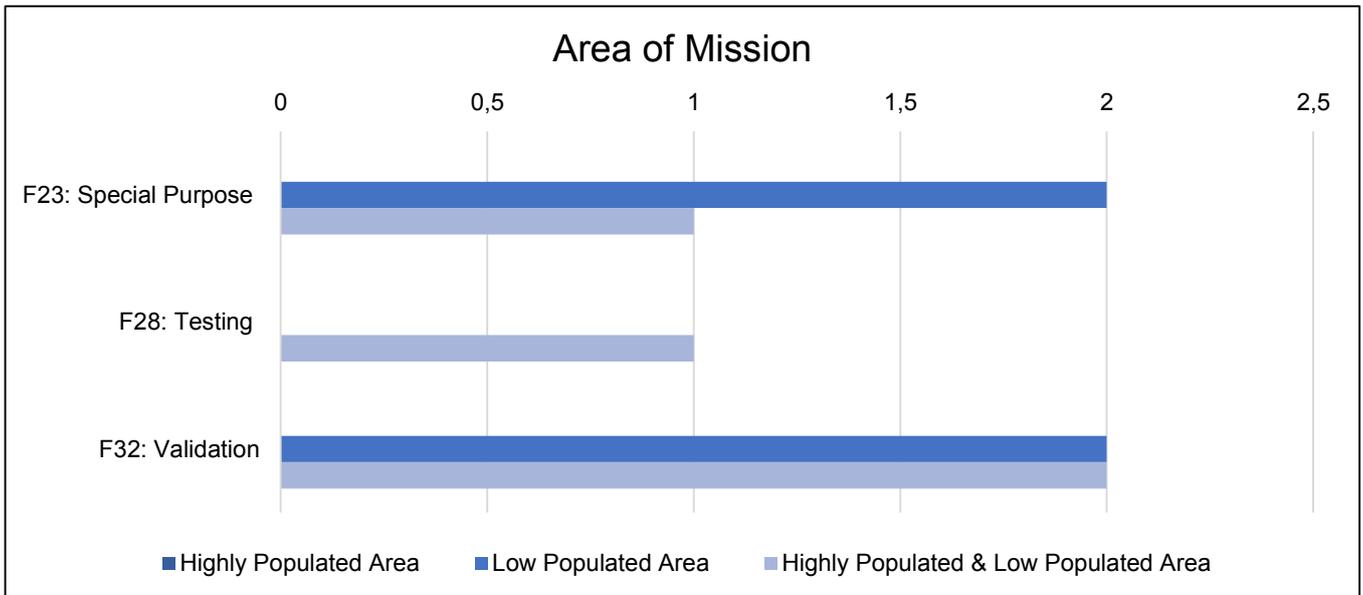
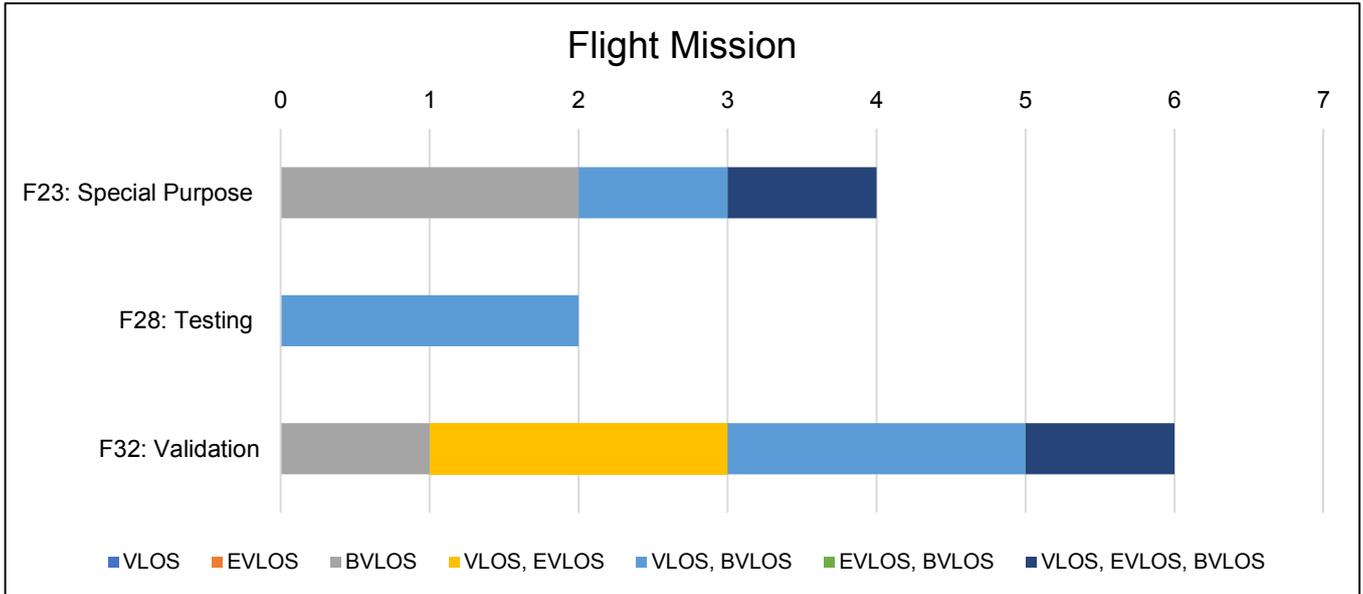
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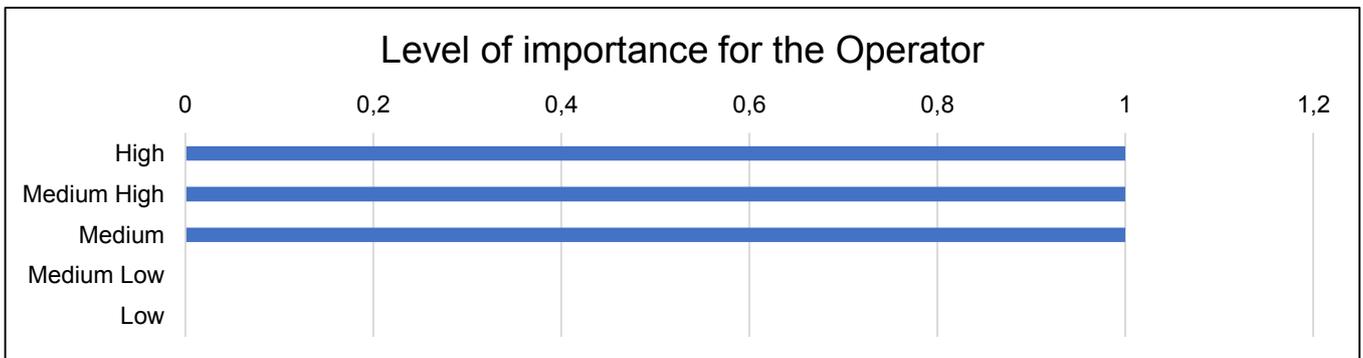
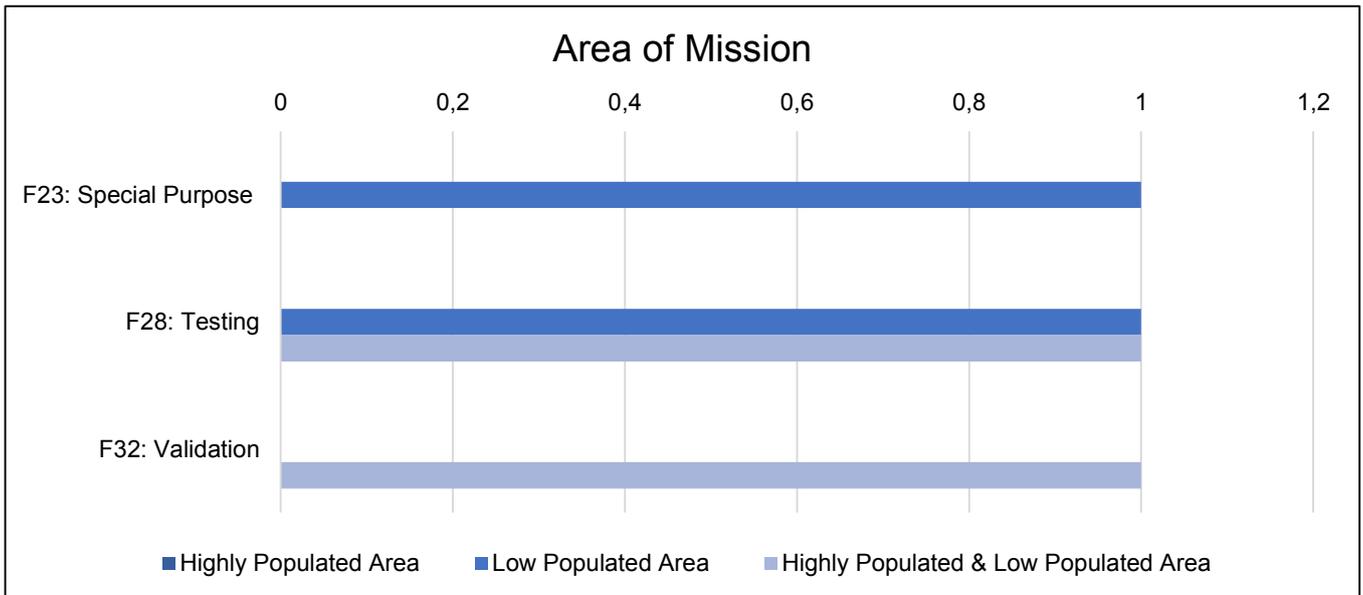
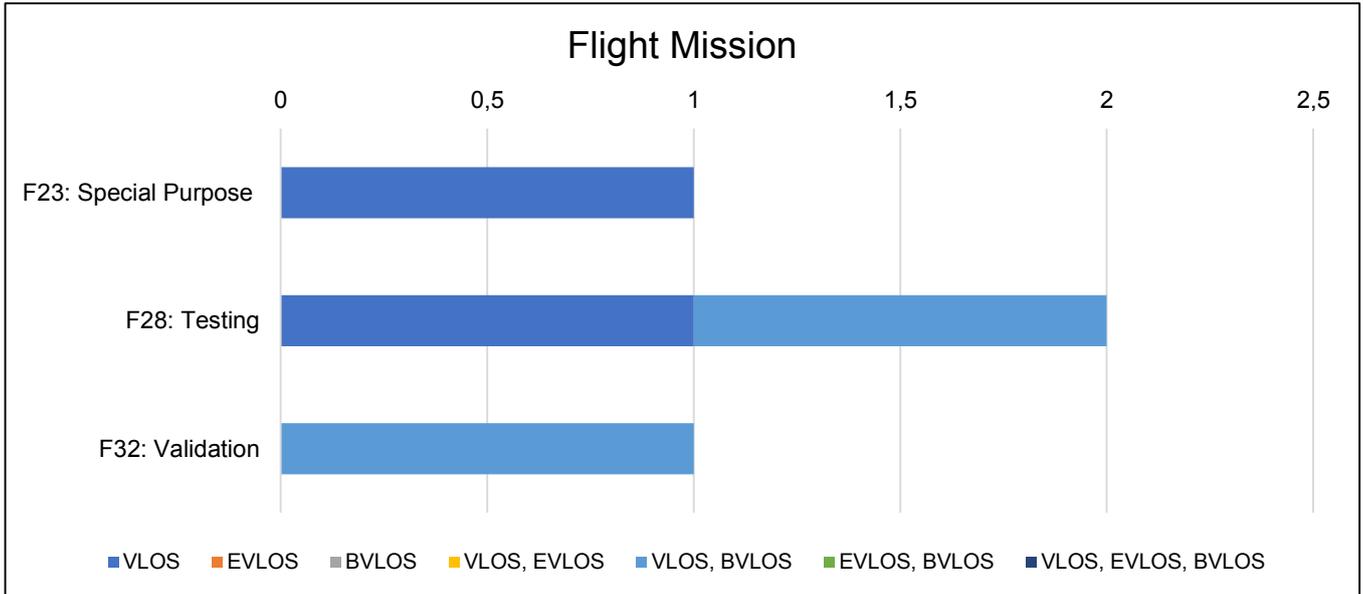
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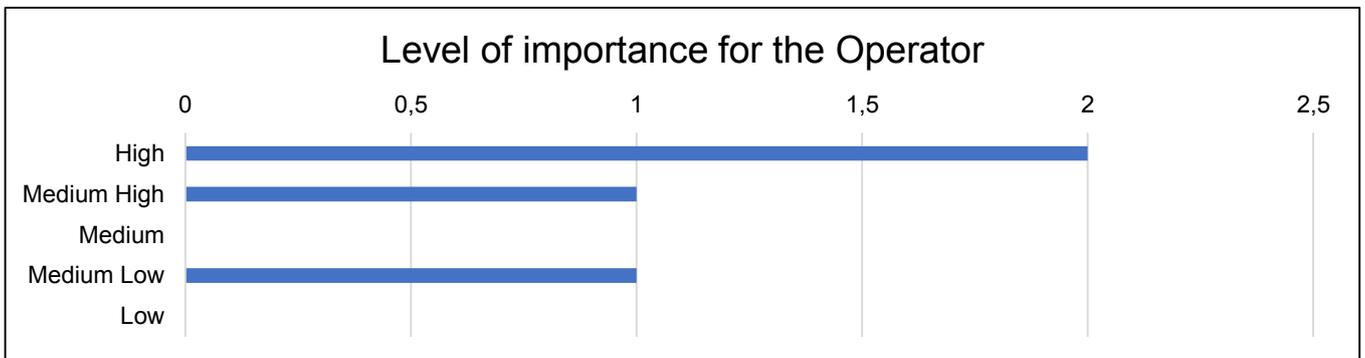
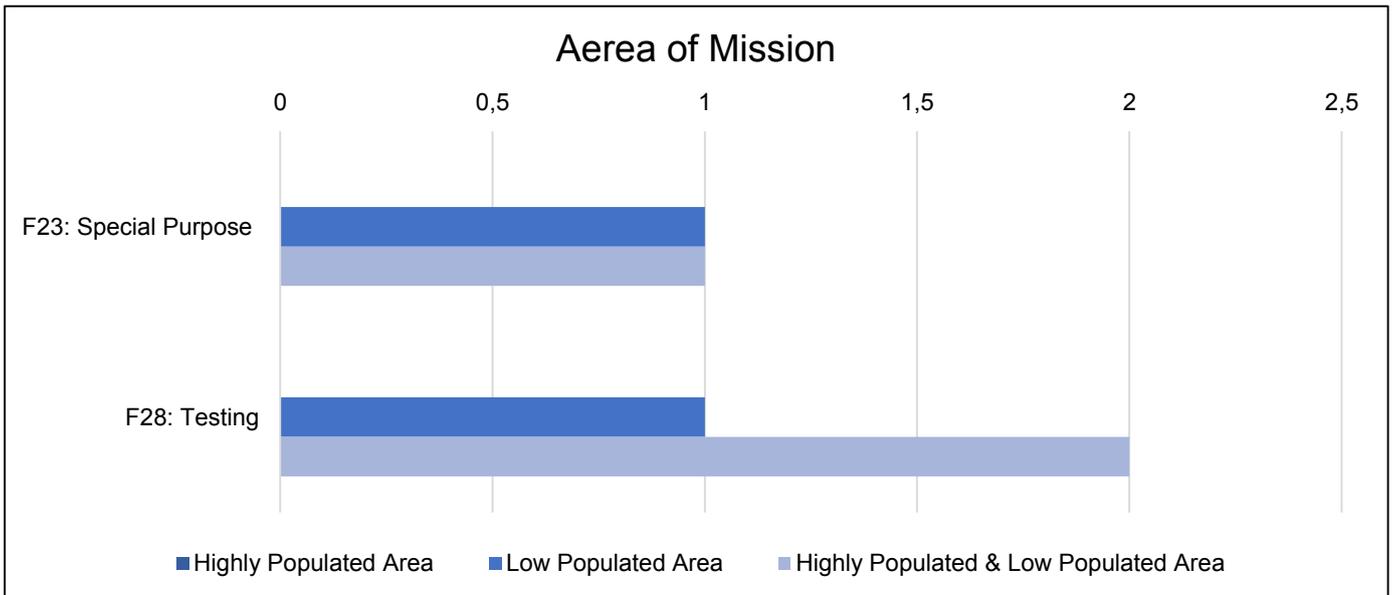
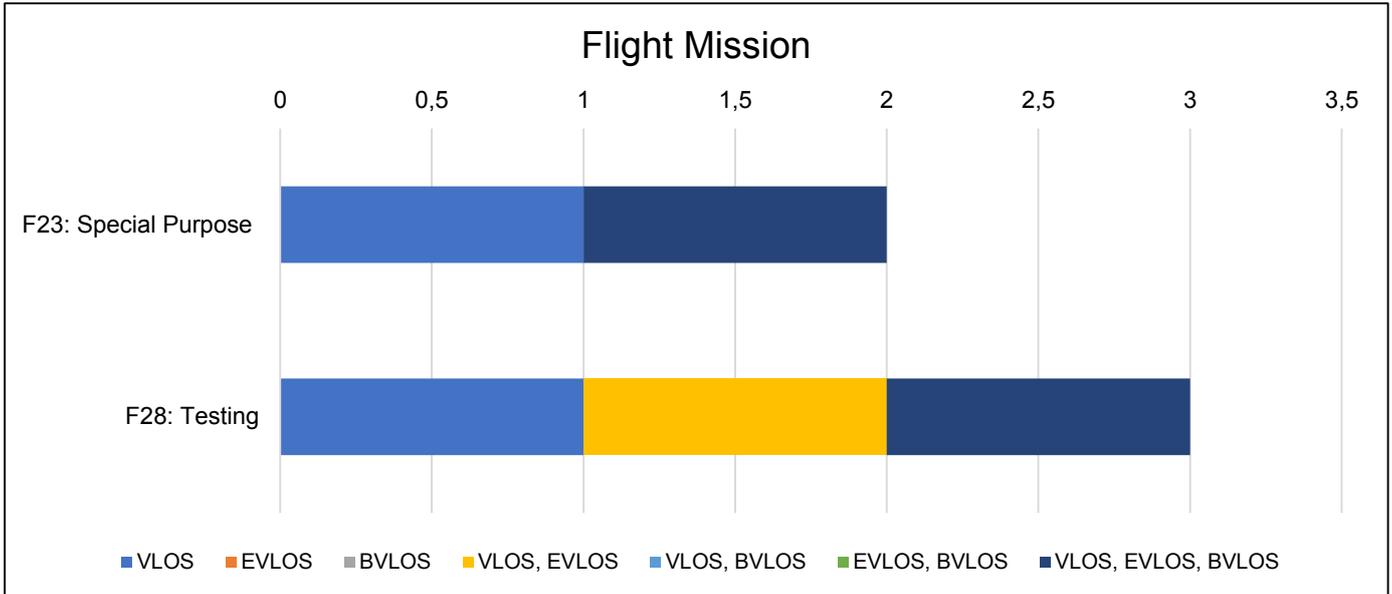
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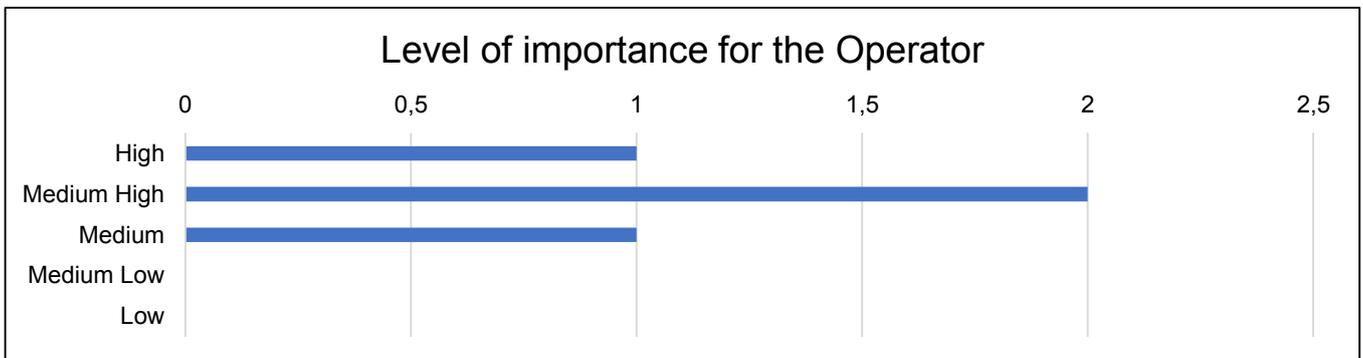
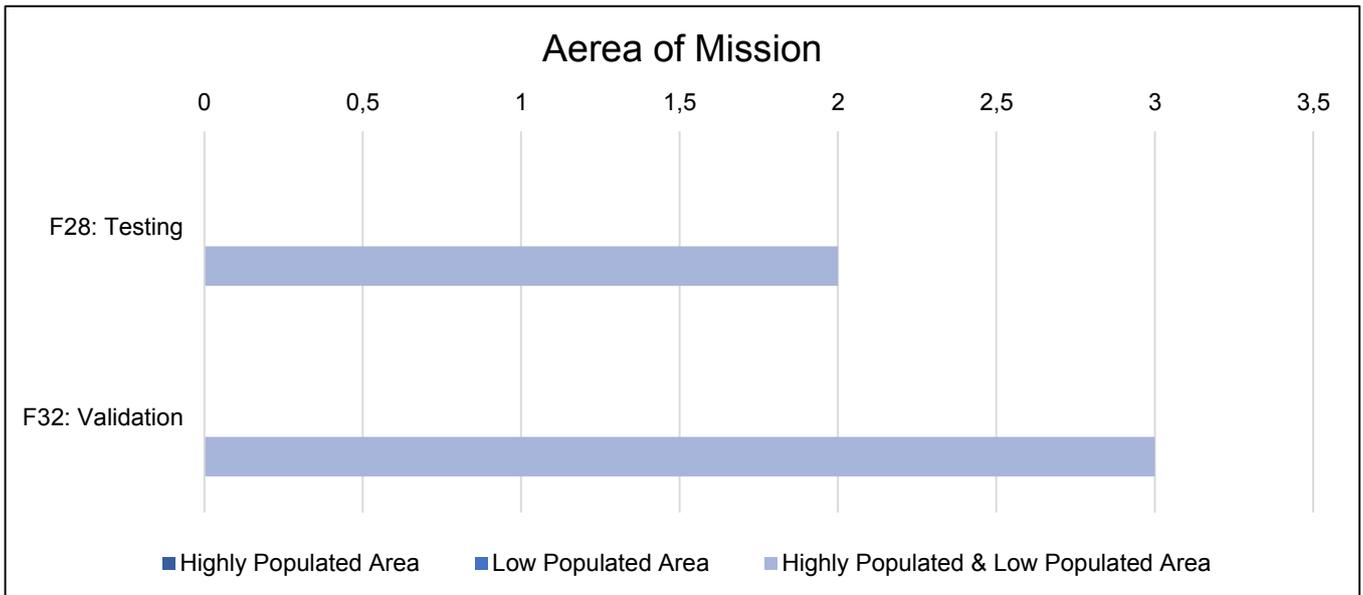
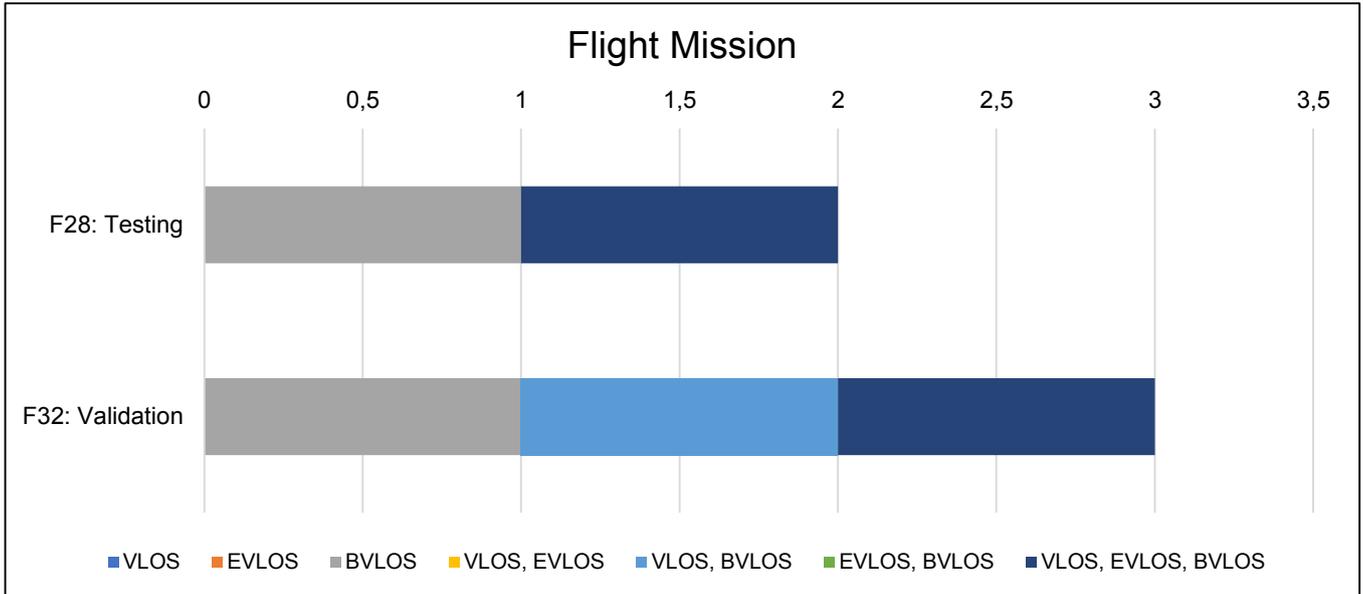
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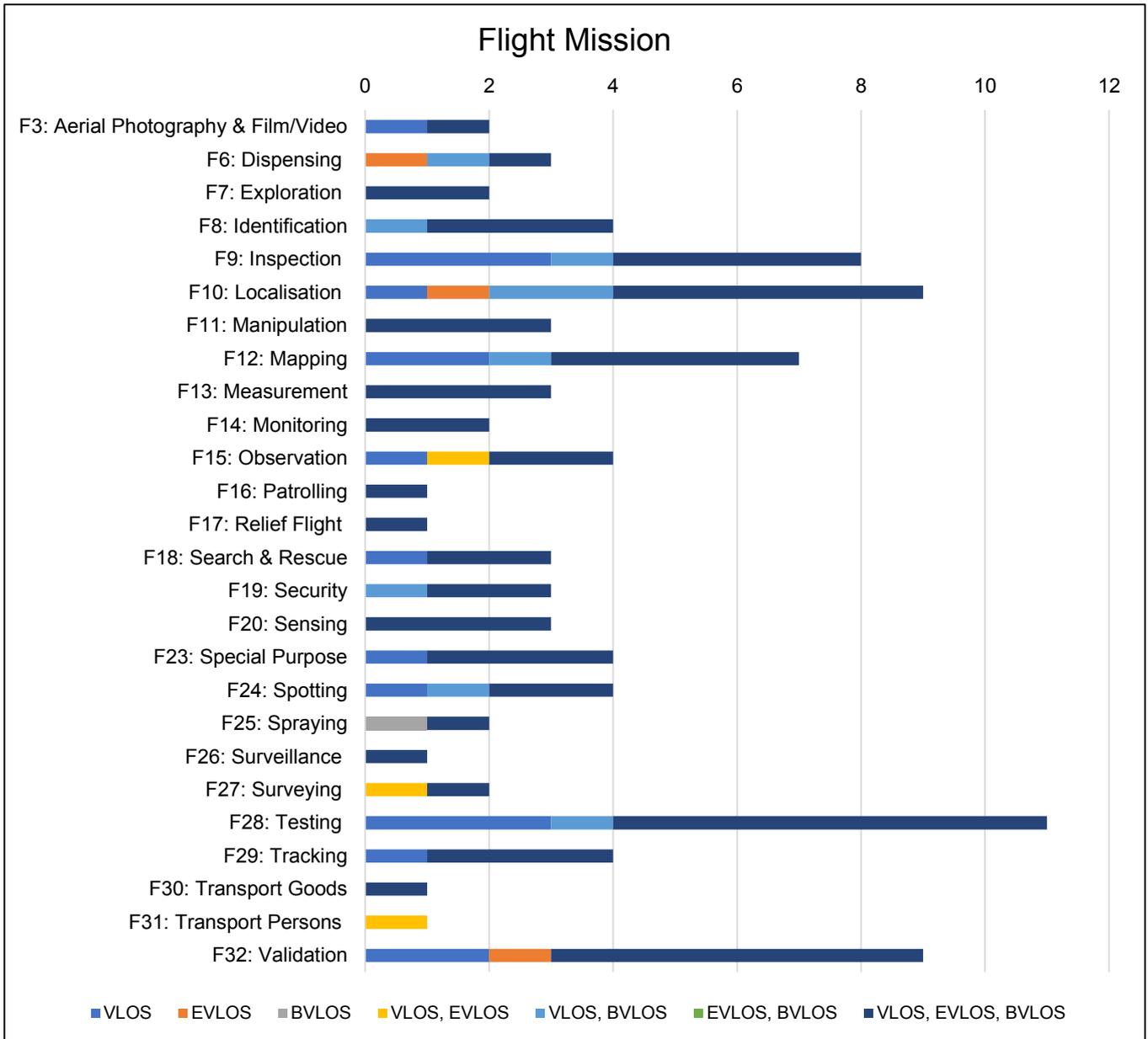
**Survey on Drone Operations & Safety Risk Analysis Methods**



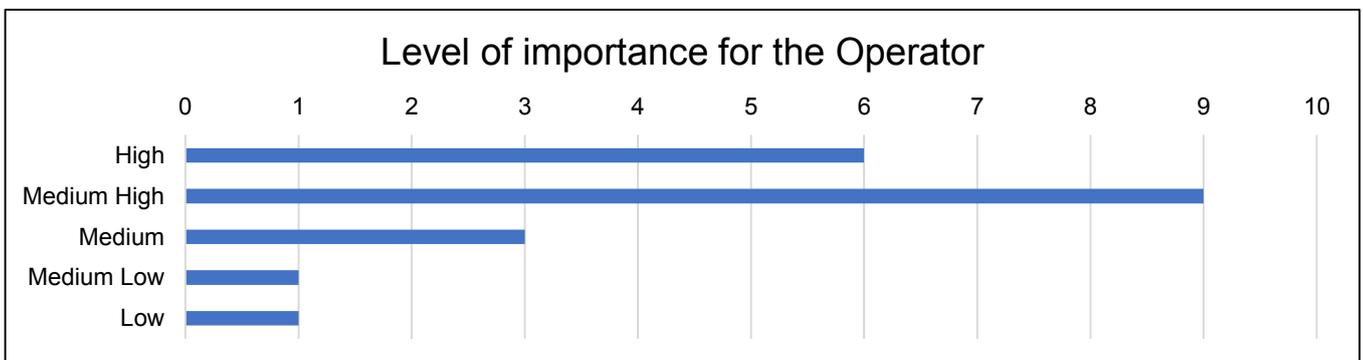
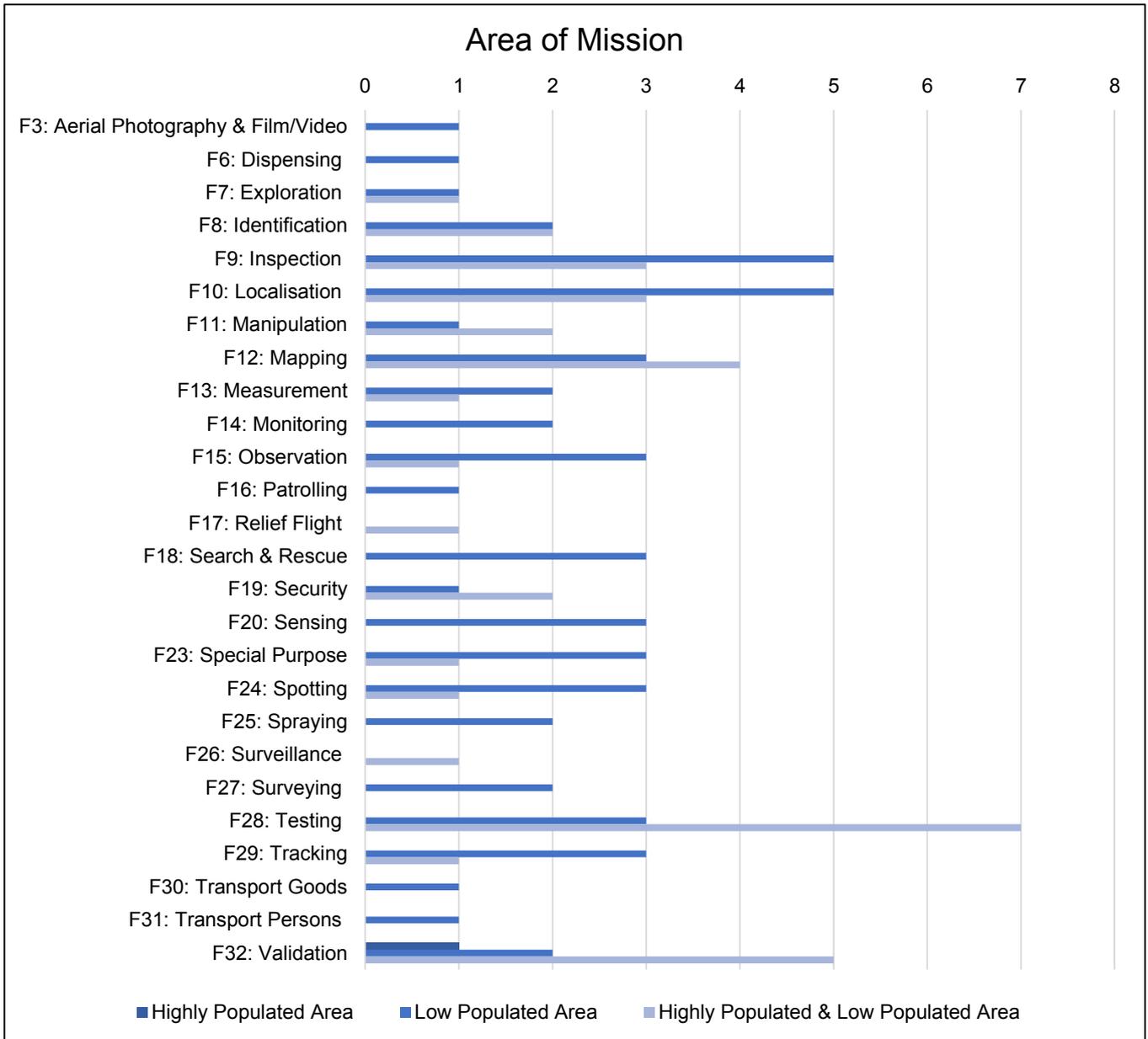
## Survey on Drone Operations & Safety Risk Analysis Methods



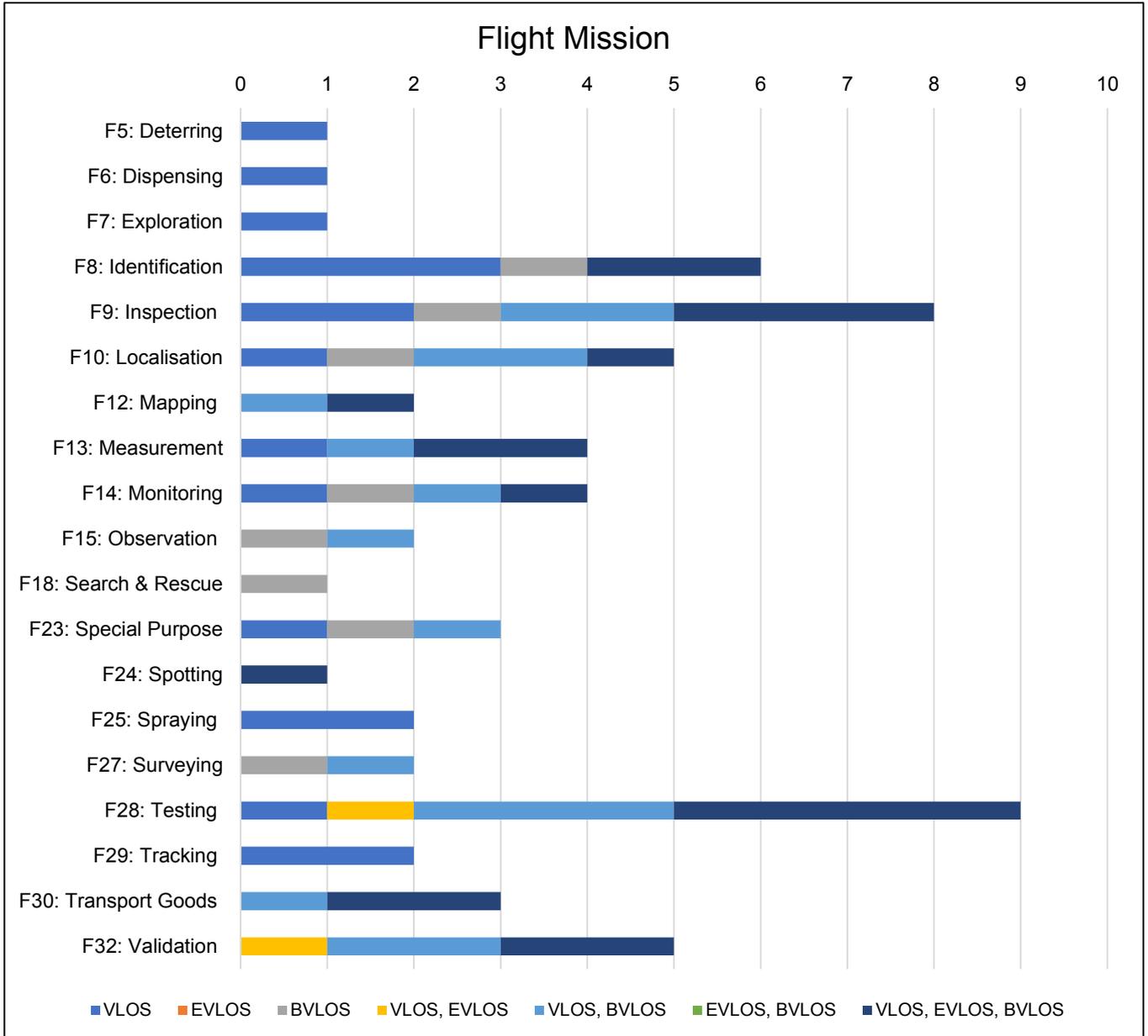
**Survey on Drone Operations & Safety Risk Analysis Methods**



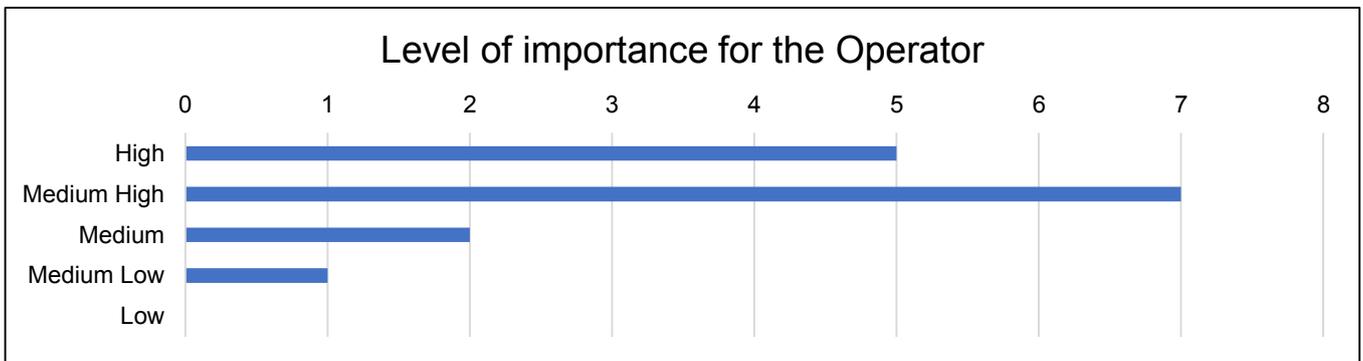
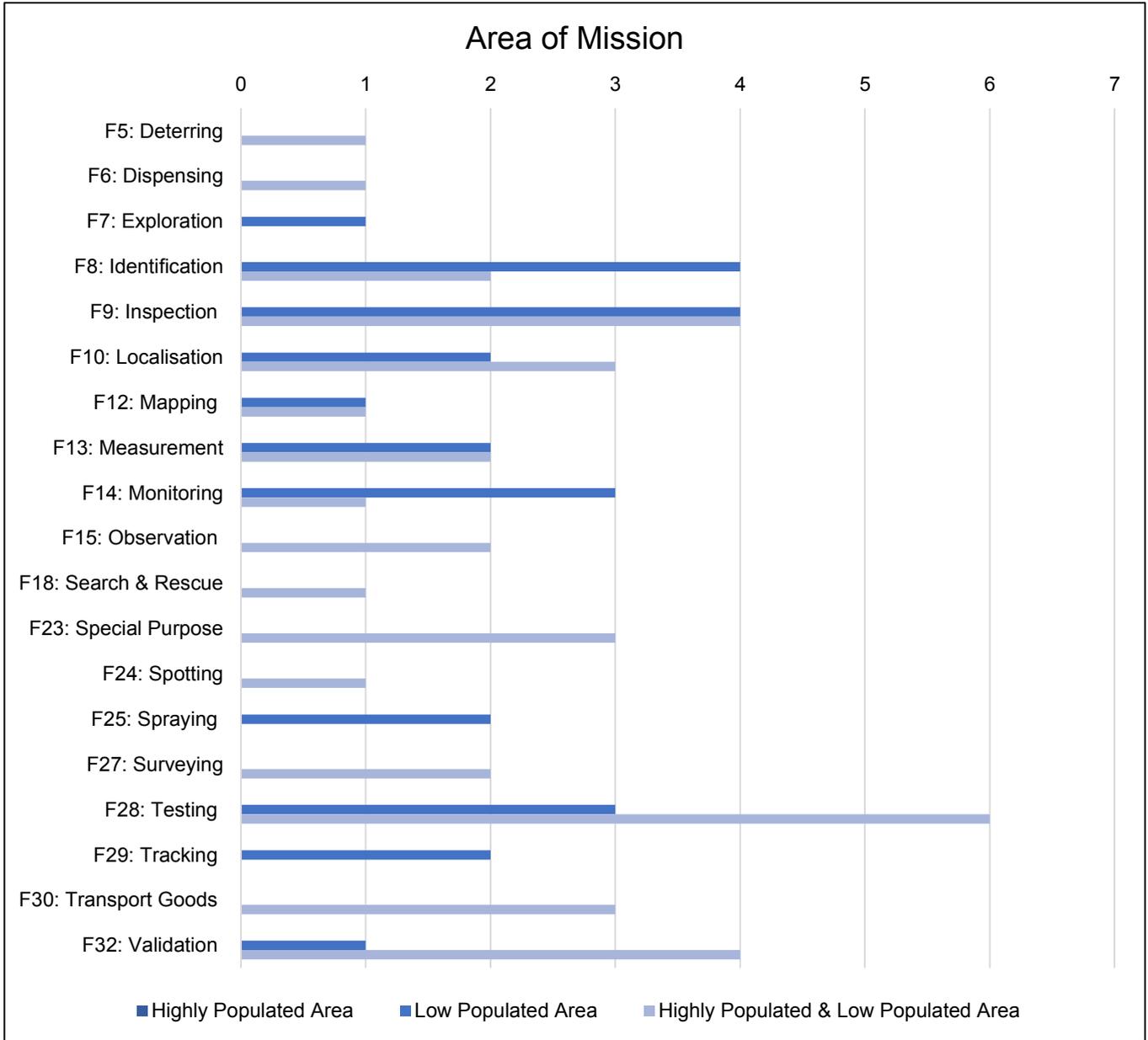
## Survey on Drone Operations & Safety Risk Analysis Methods



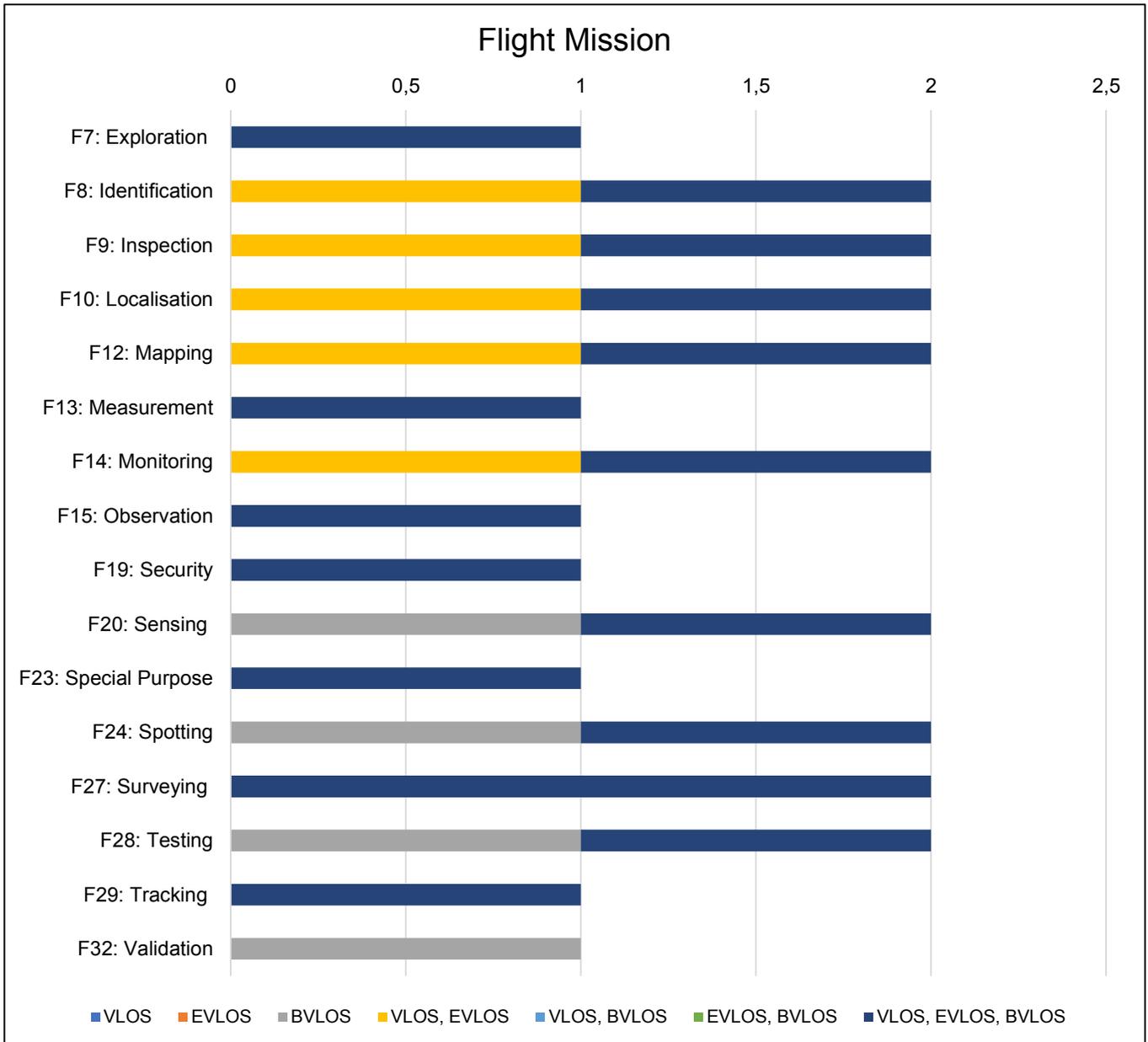
## Survey on Drone Operations & Safety Risk Analysis Methods



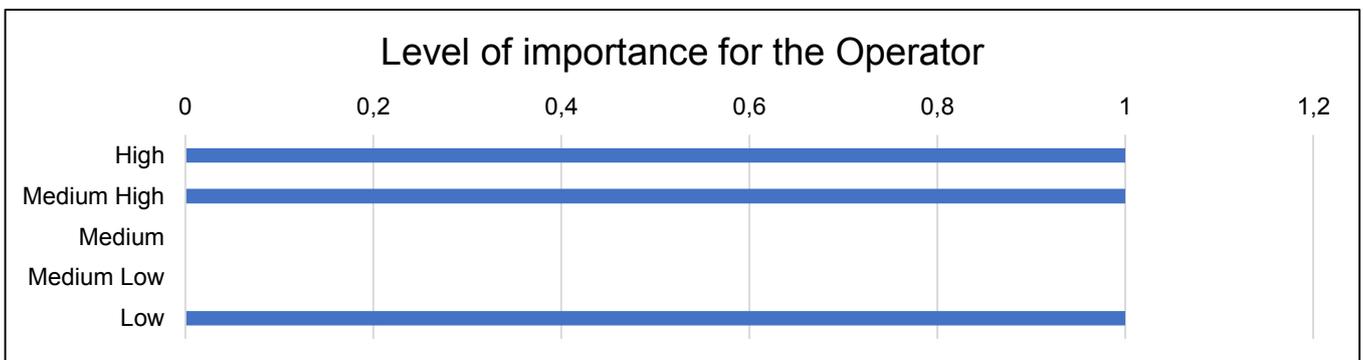
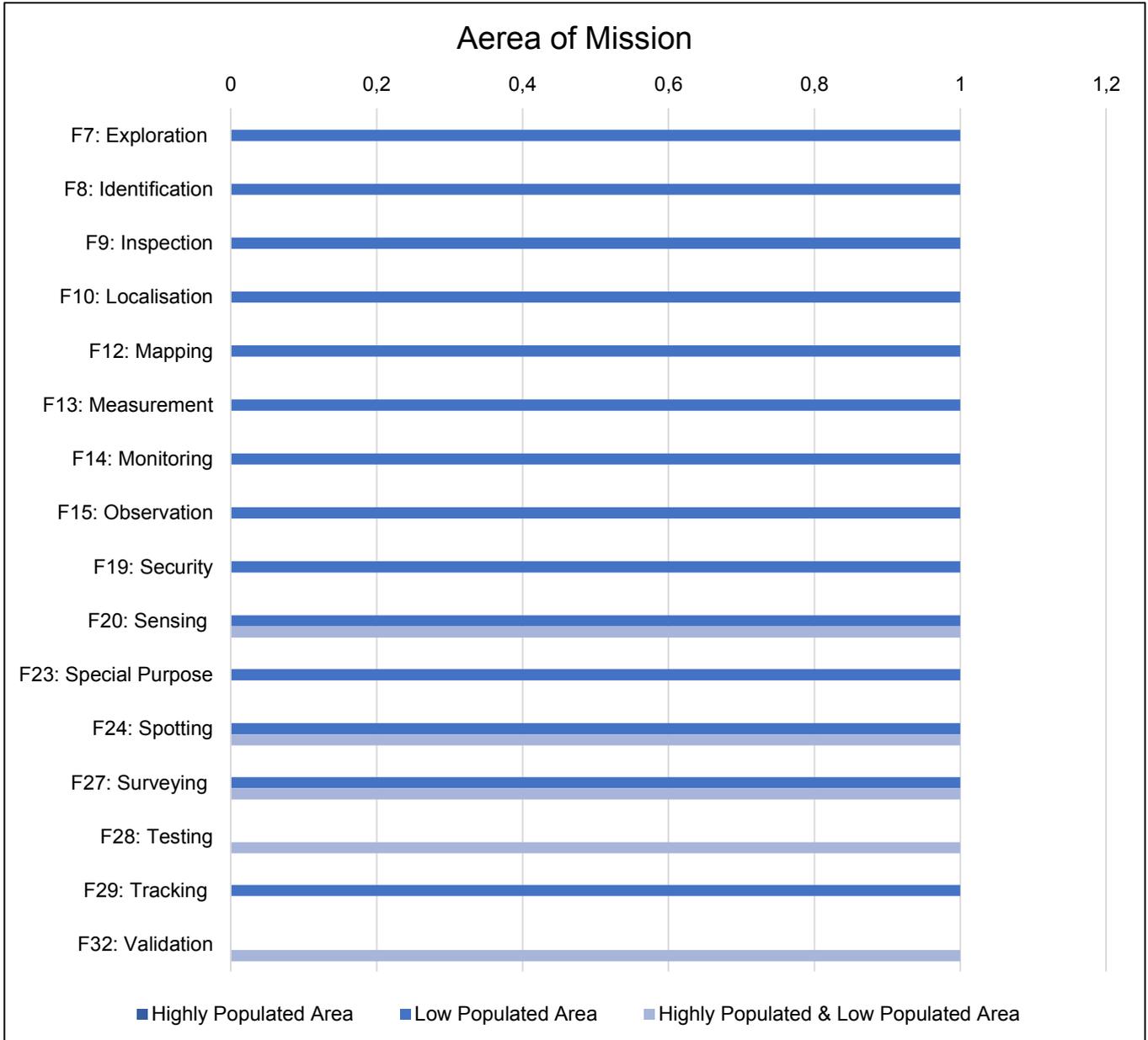
## Survey on Drone Operations & Safety Risk Analysis Methods



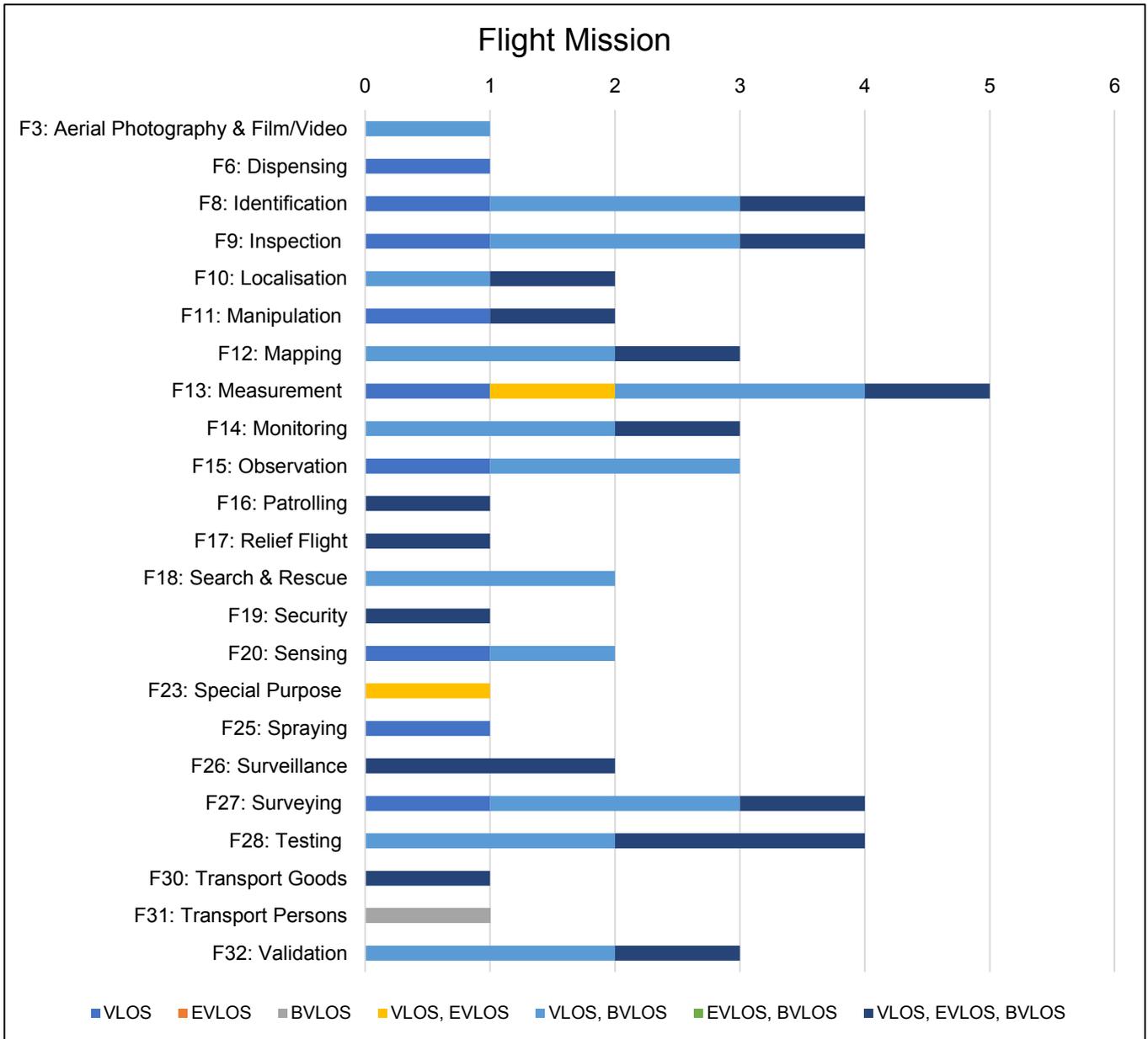
## Survey on Drone Operations & Safety Risk Analysis Methods



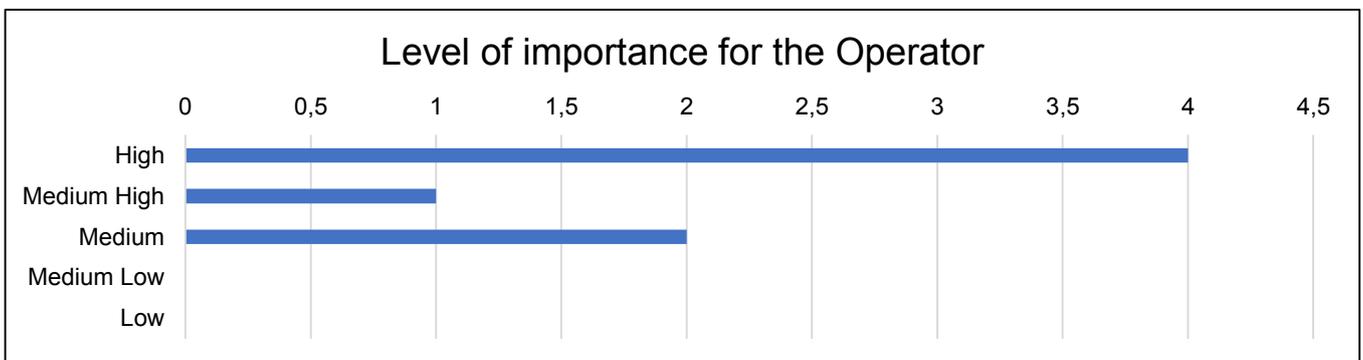
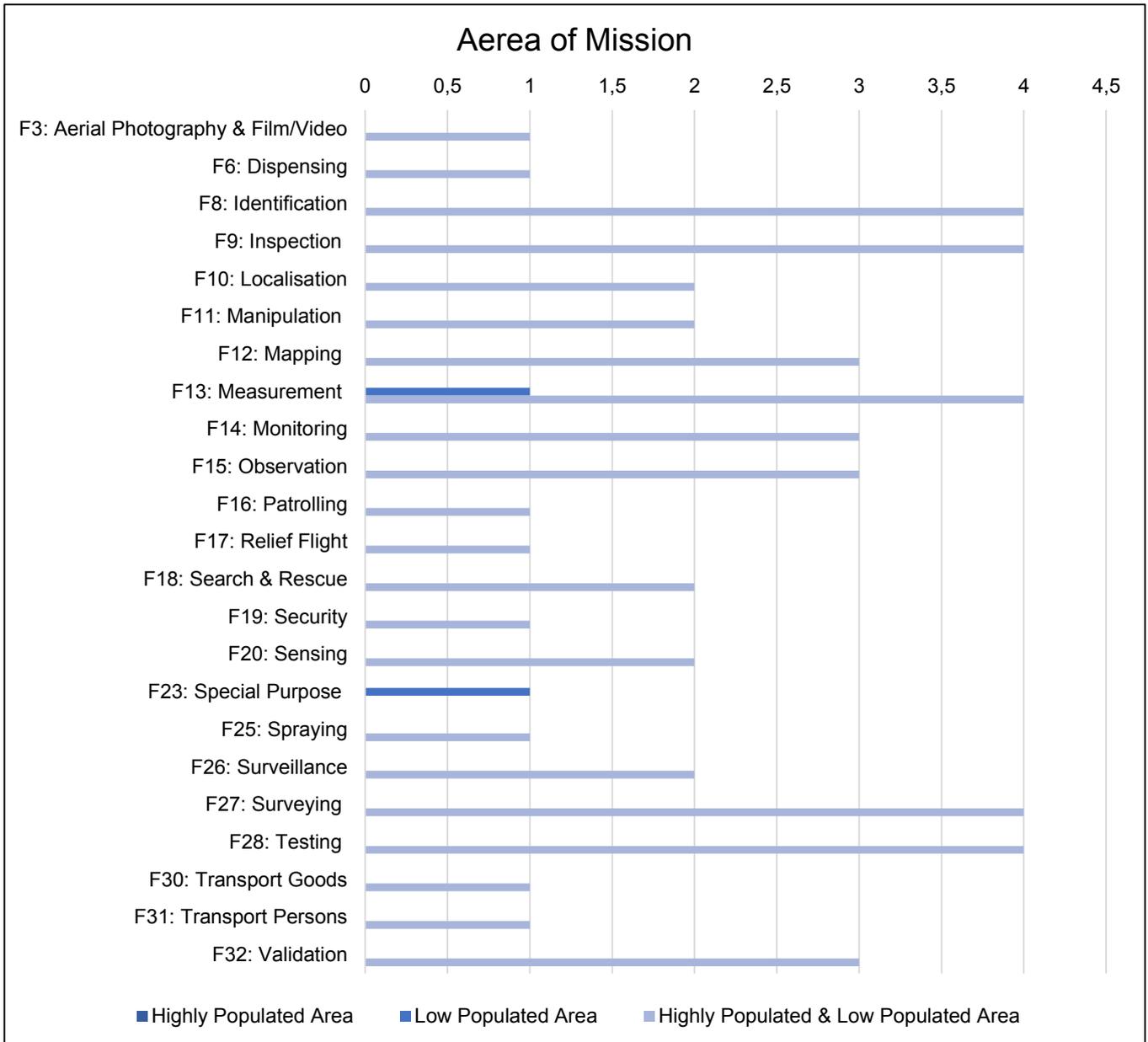
**Survey on Drone Operations & Safety Risk Analysis Methods**



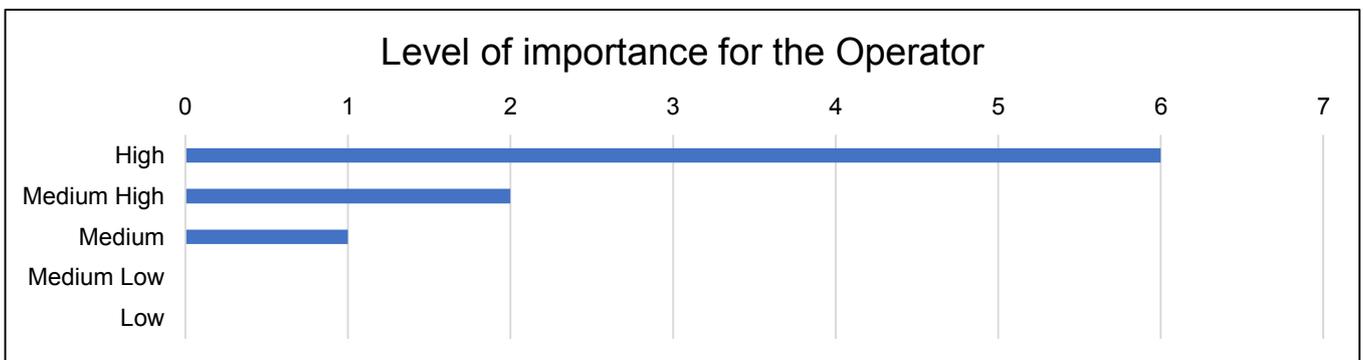
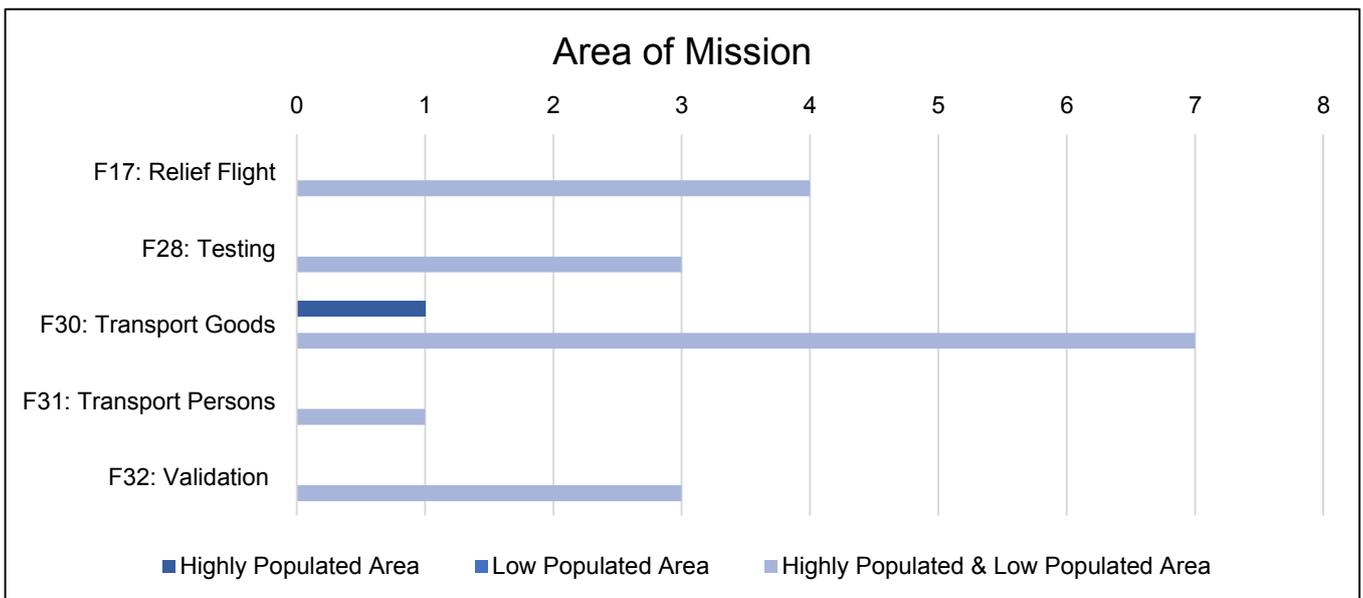
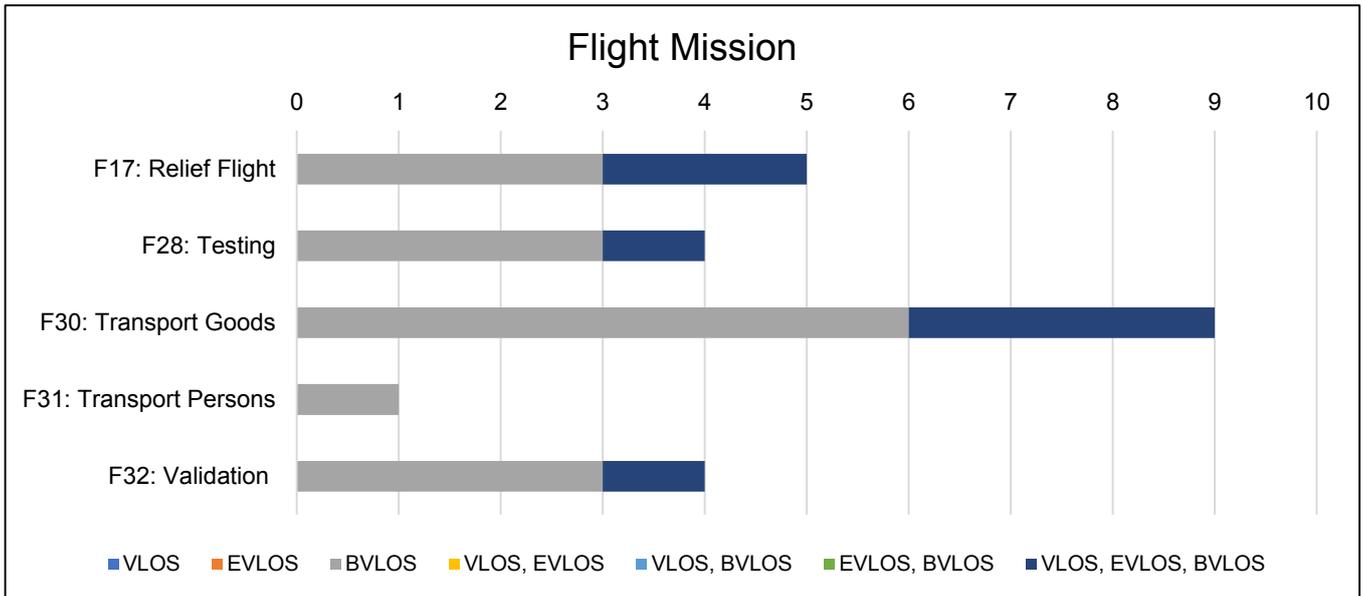
## Survey on Drone Operations & Safety Risk Analysis Methods



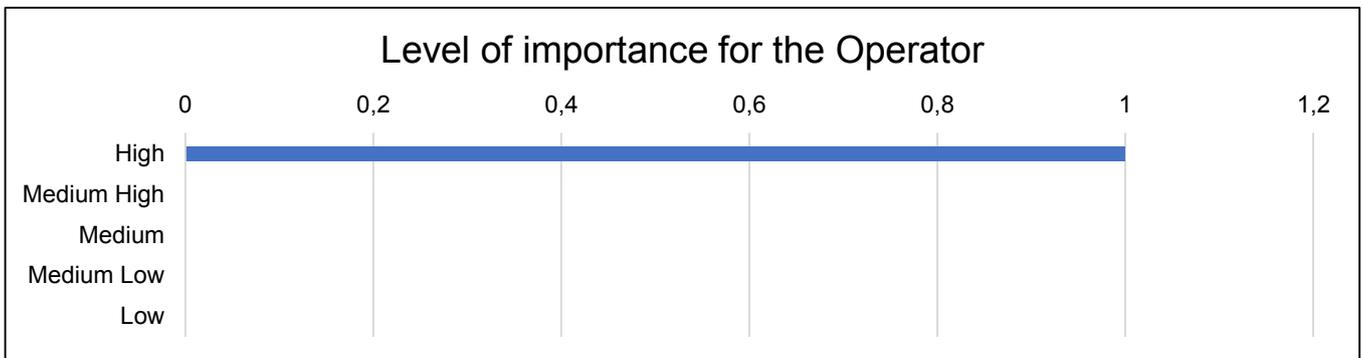
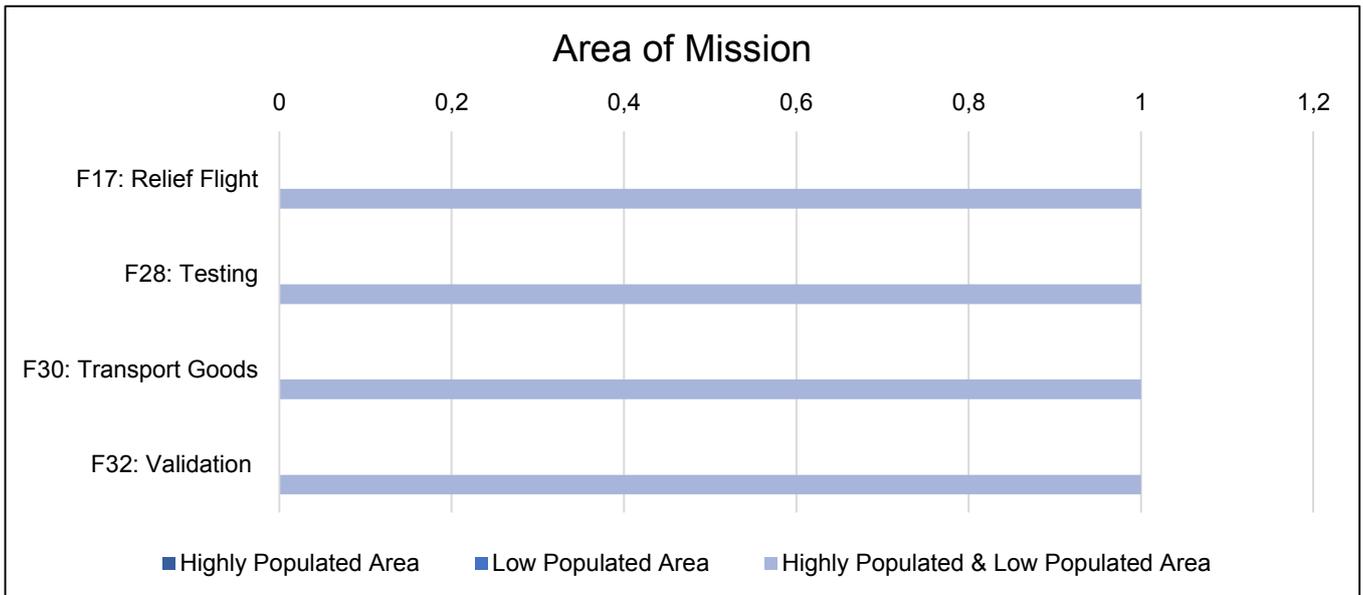
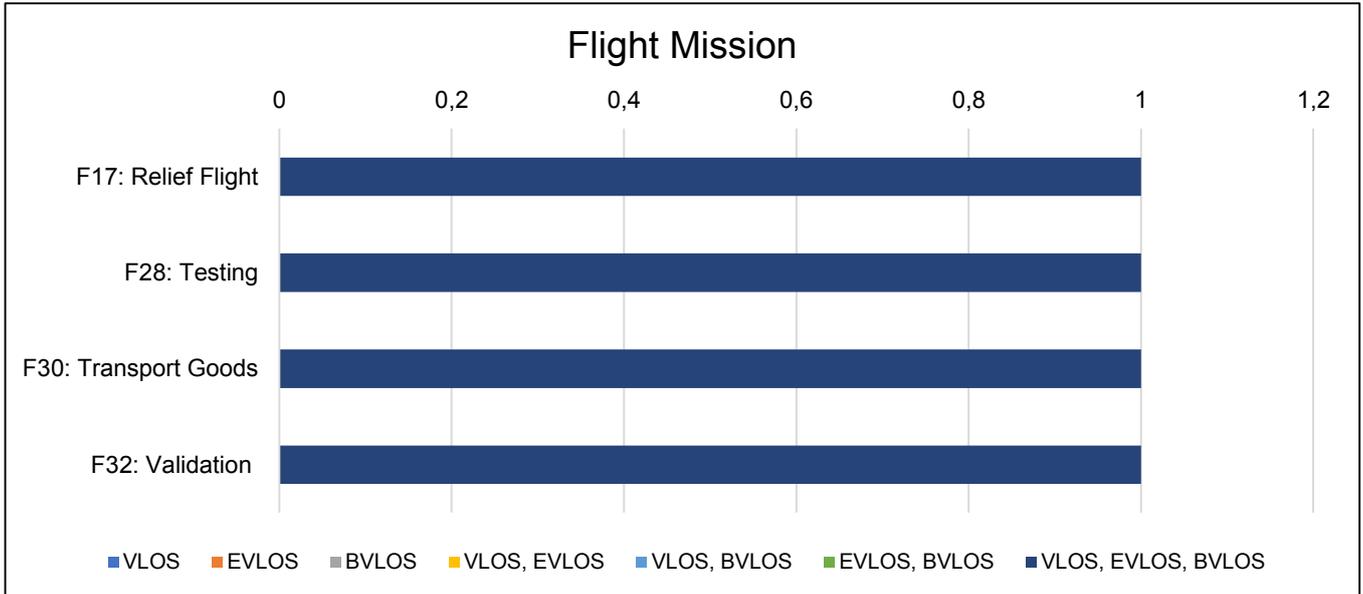
## Survey on Drone Operations & Safety Risk Analysis Methods



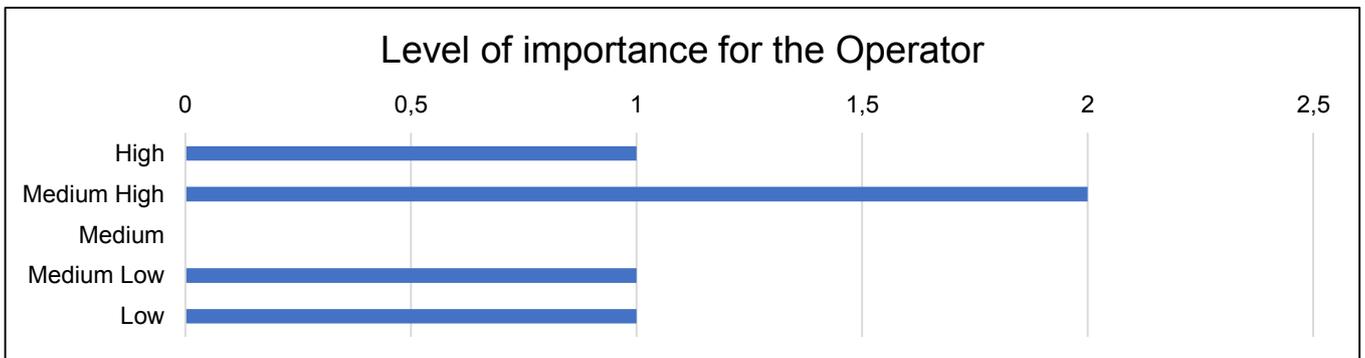
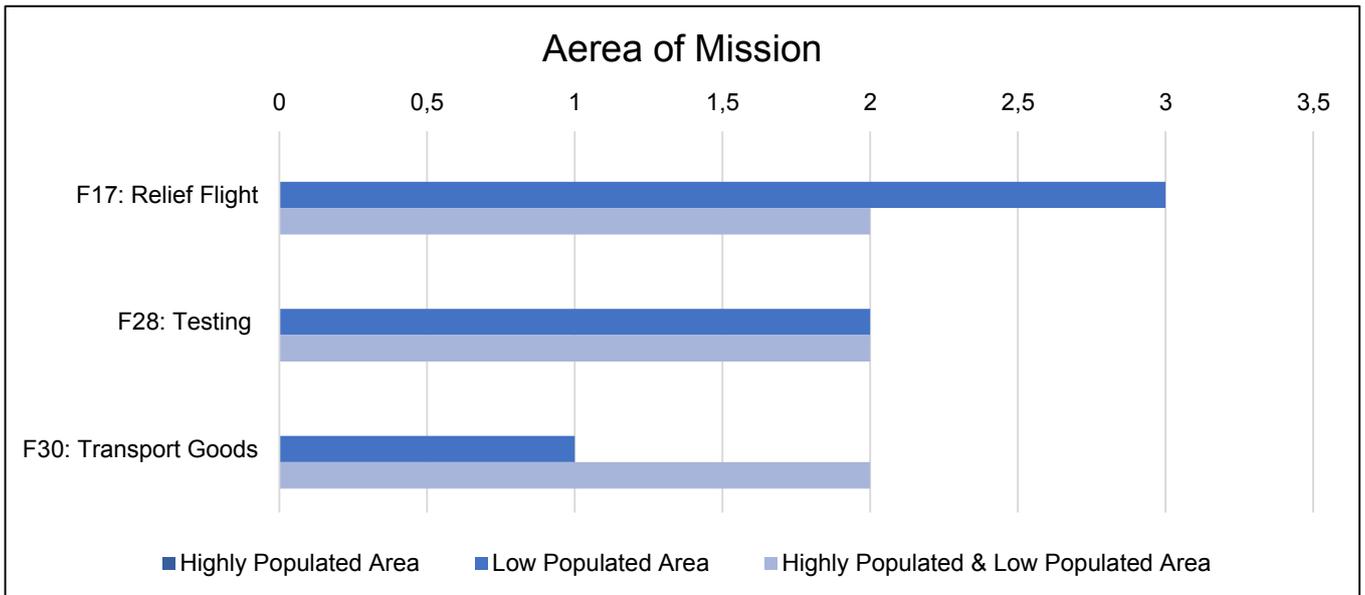
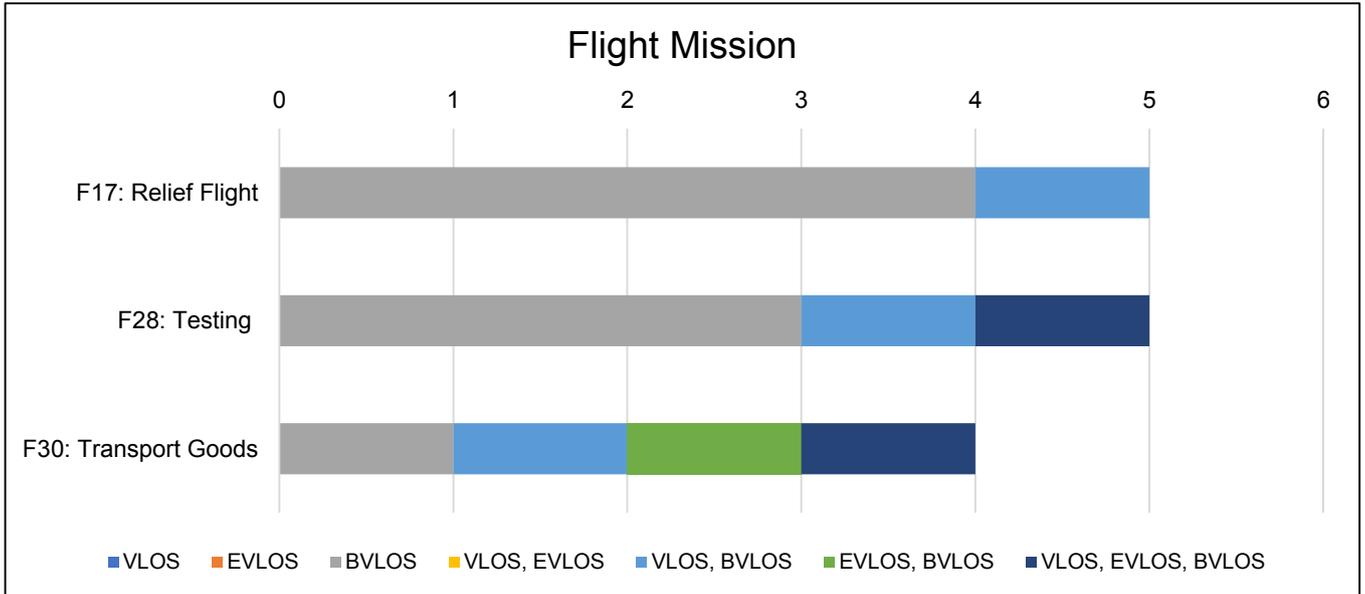
## Survey on Drone Operations & Safety Risk Analysis Methods



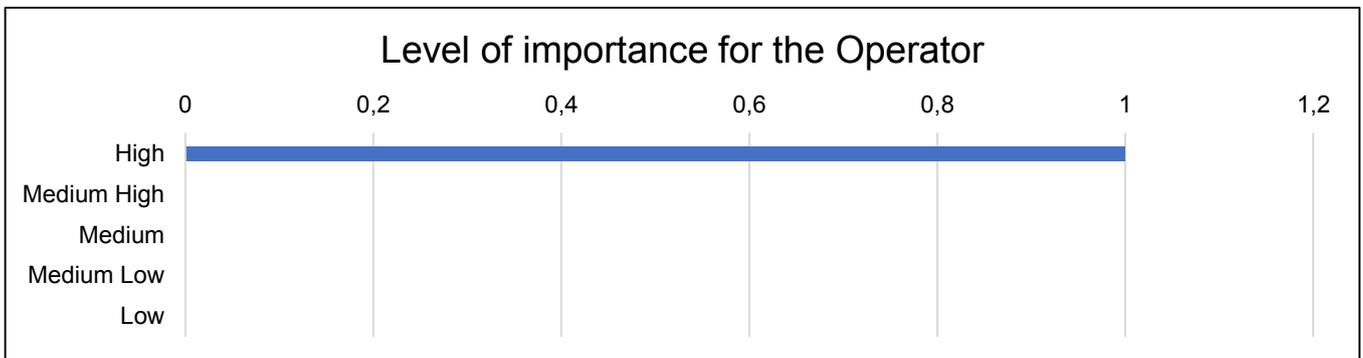
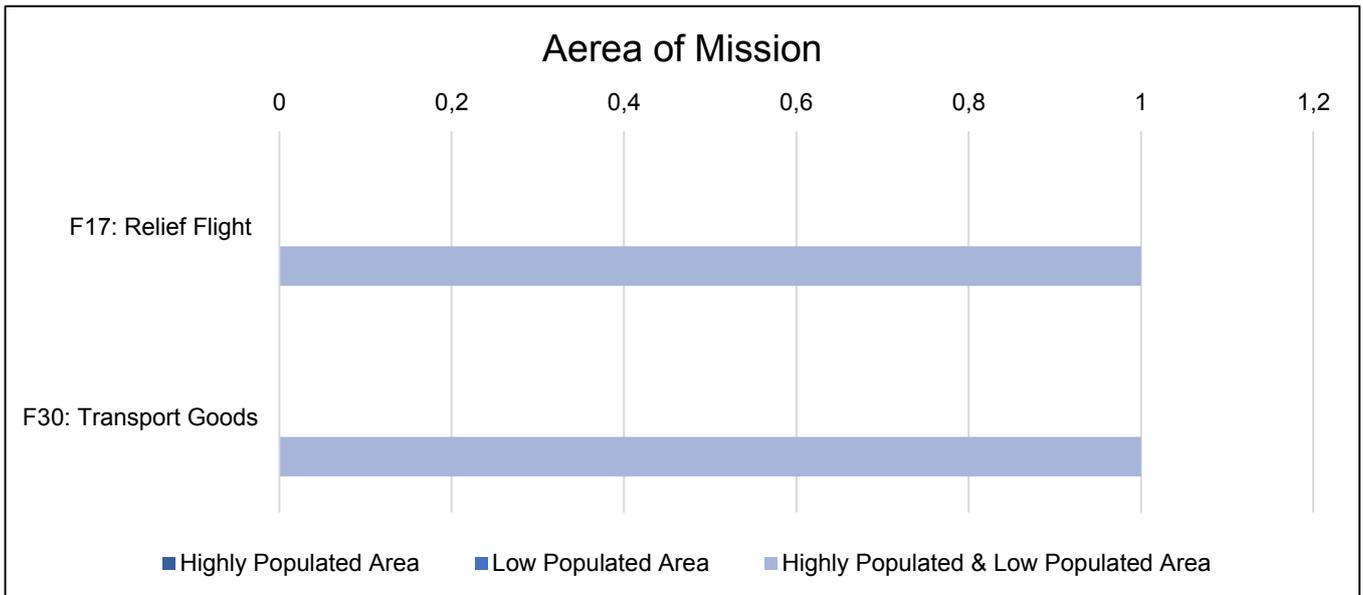
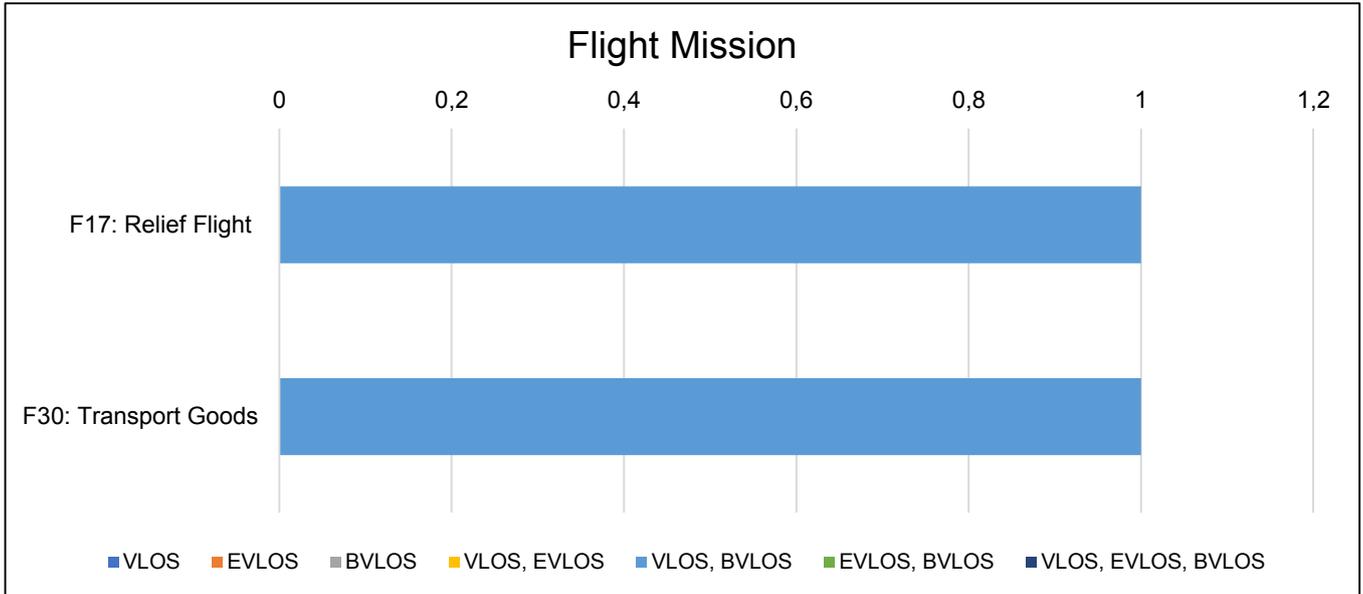
## Survey on Drone Operations & Safety Risk Analysis Methods



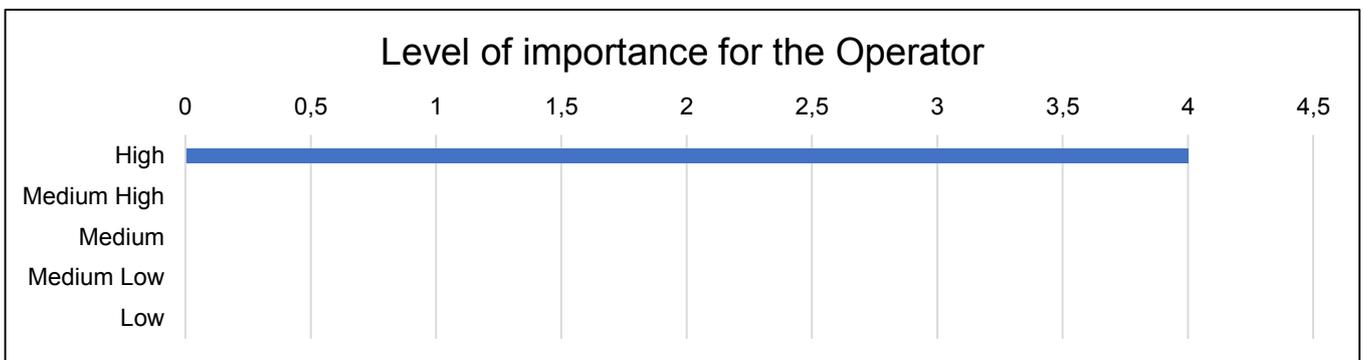
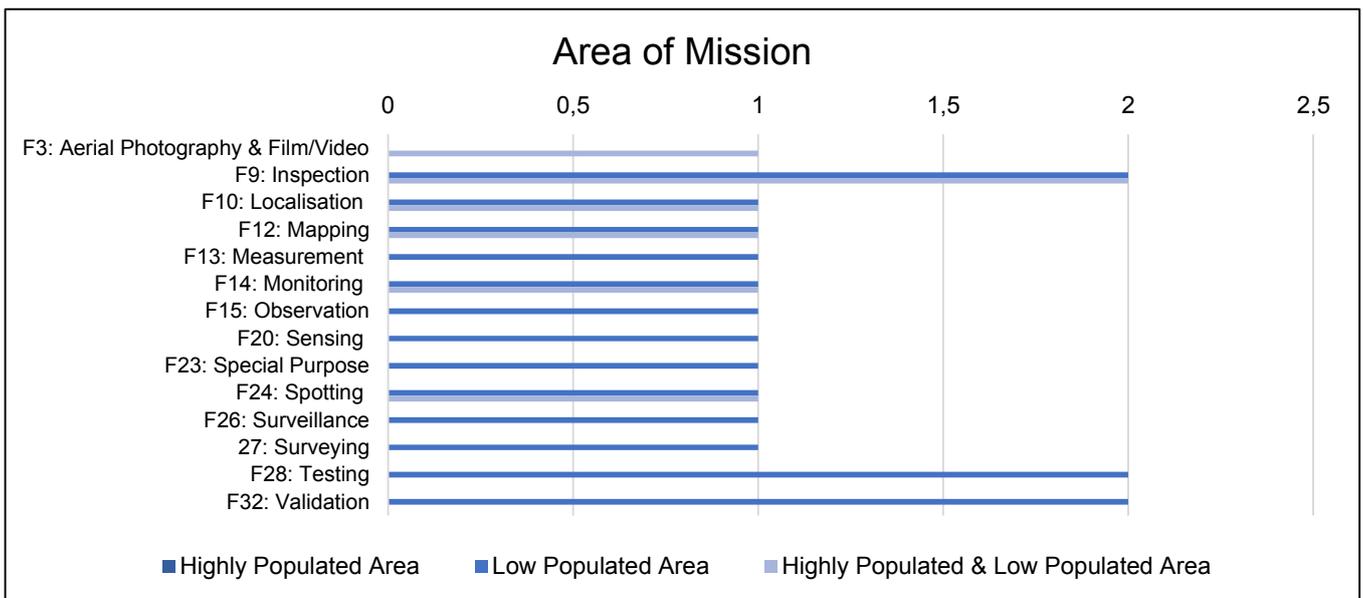
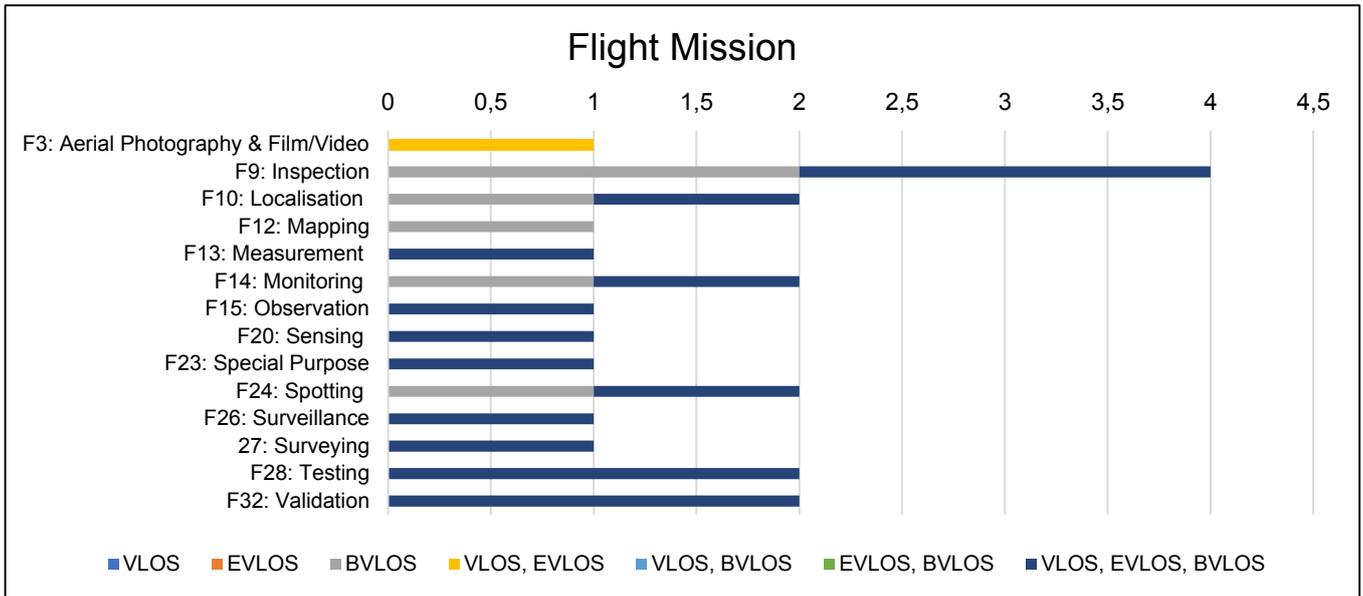
## Survey on Drone Operations & Safety Risk Analysis Methods



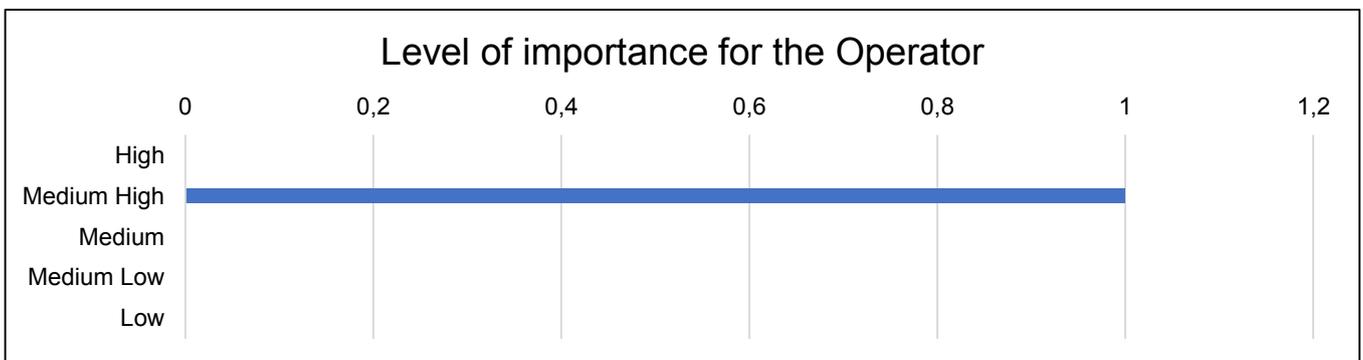
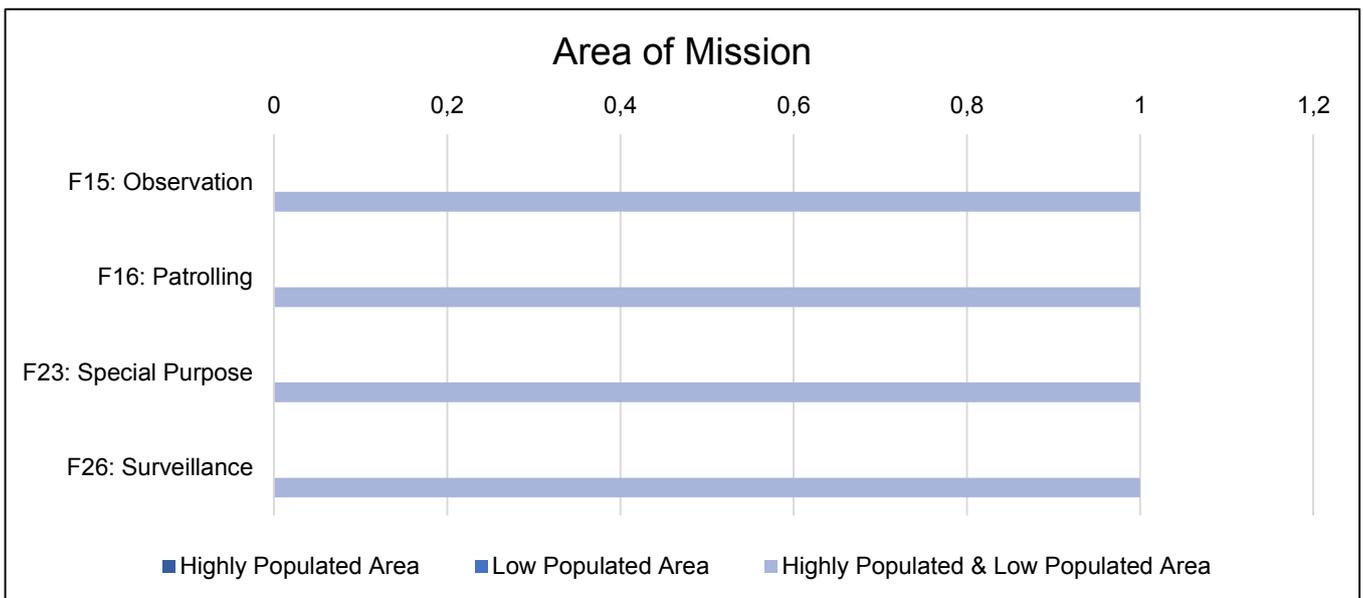
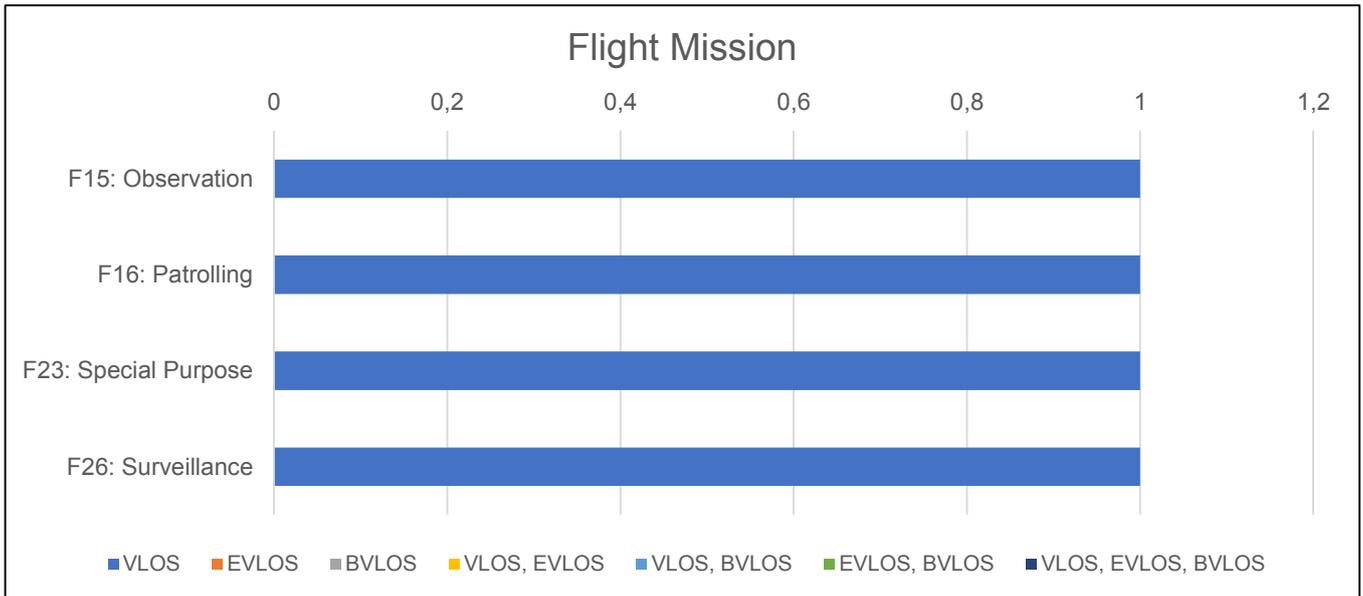
## Survey on Drone Operations & Safety Risk Analysis Methods



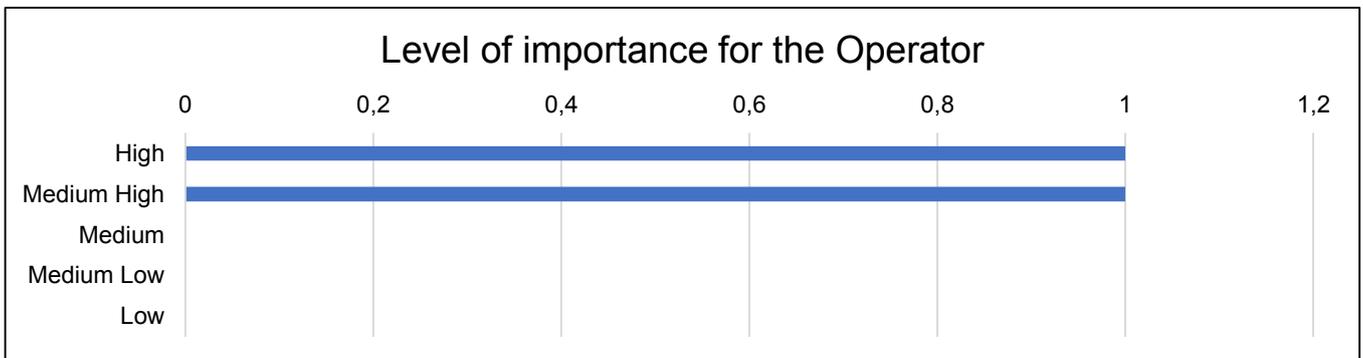
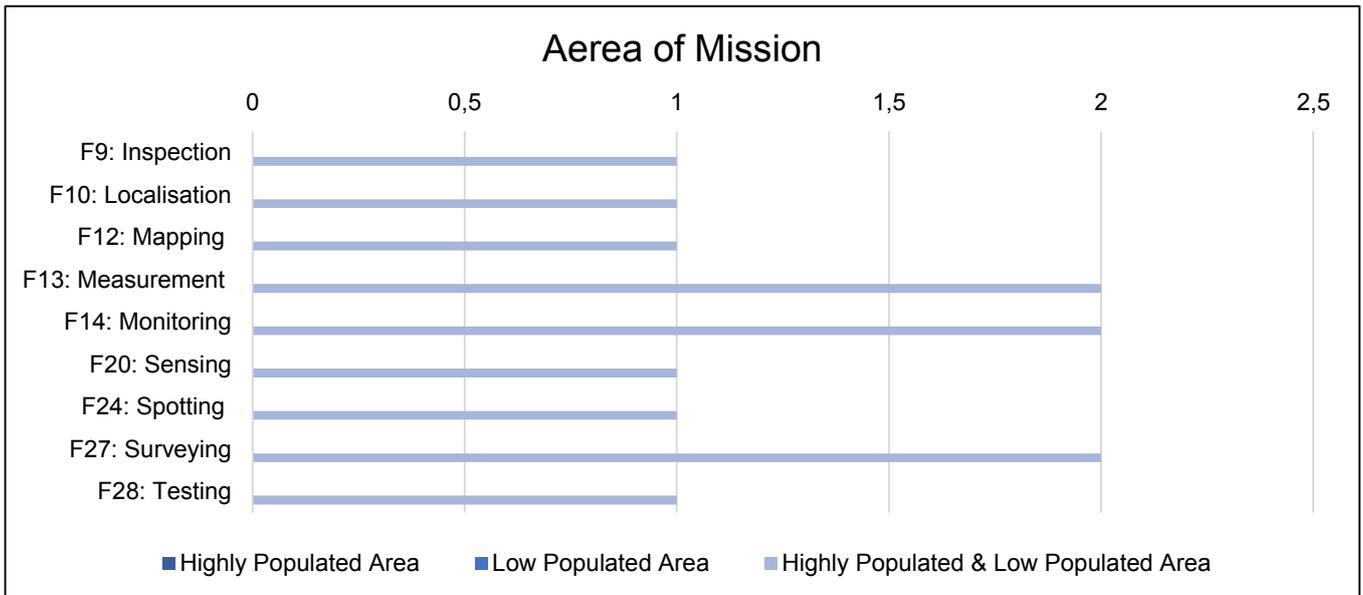
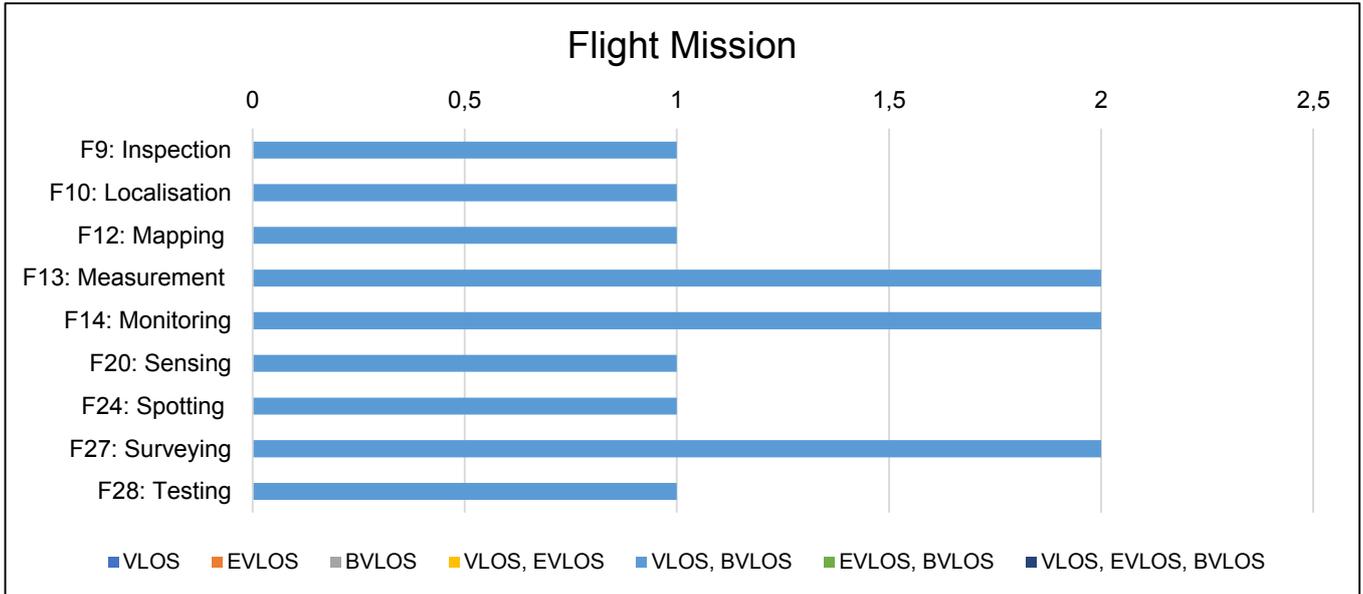
## Survey on Drone Operations & Safety Risk Analysis Methods



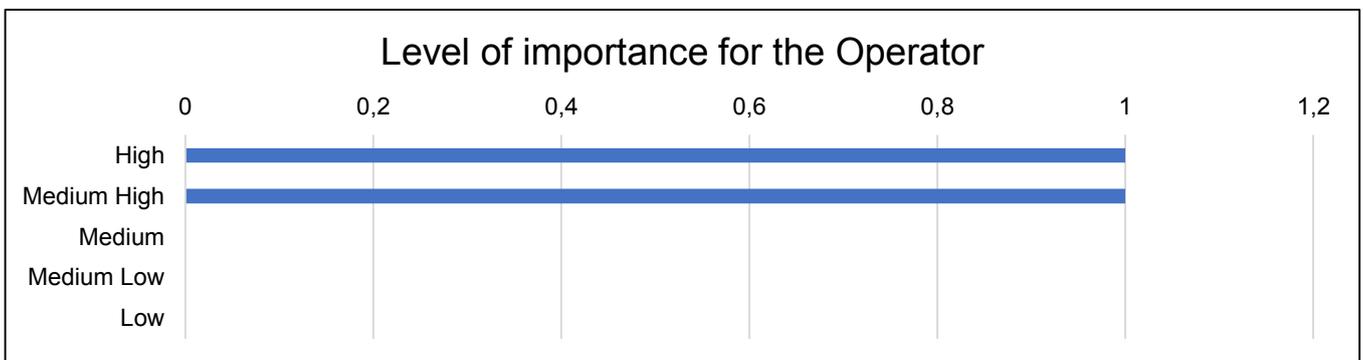
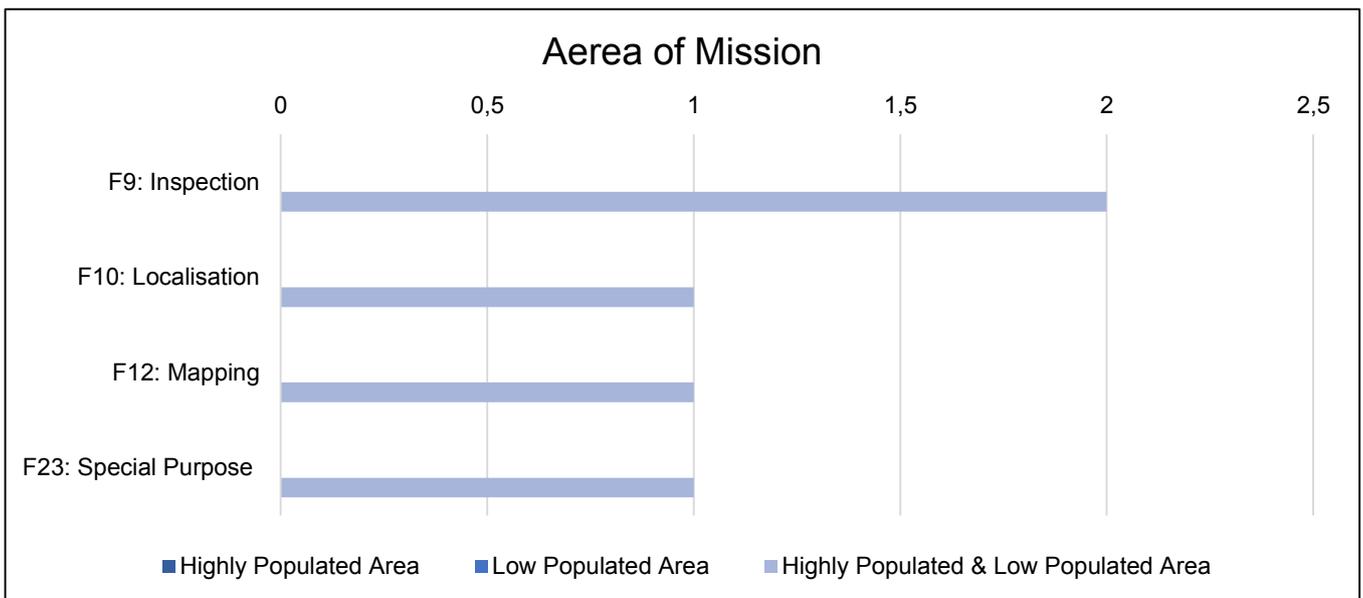
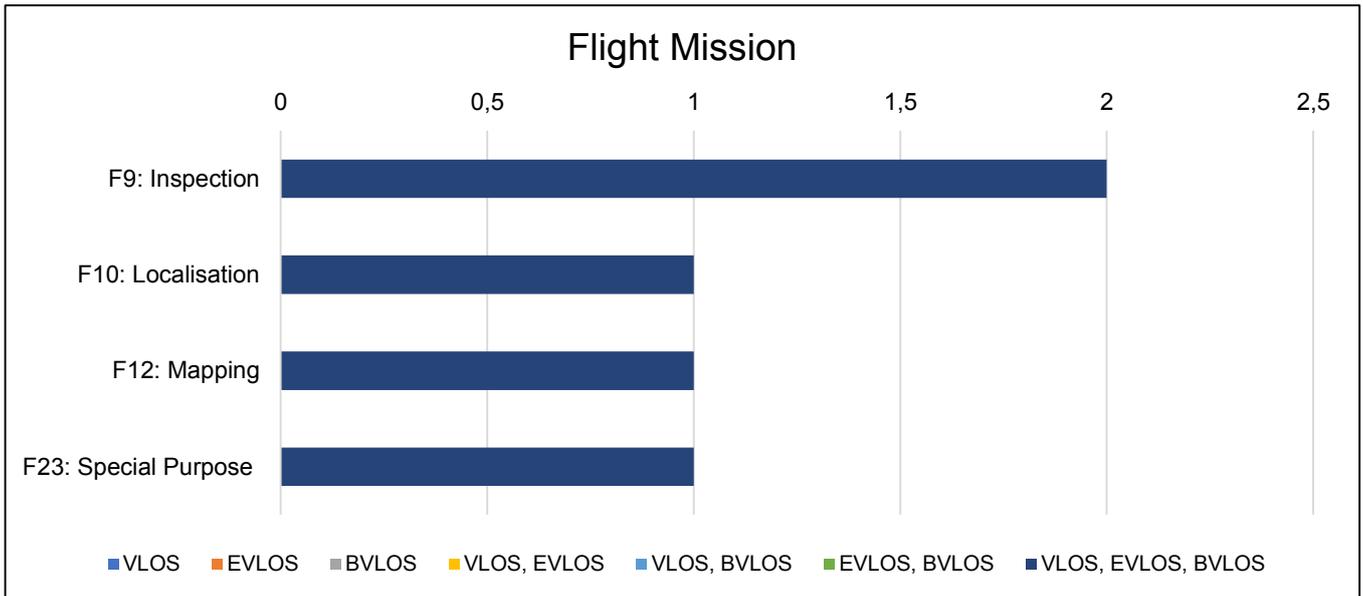
## Survey on Drone Operations & Safety Risk Analysis Methods



## Survey on Drone Operations & Safety Risk Analysis Methods



## Survey on Drone Operations & Safety Risk Analysis Methods



## Survey on Drone Operations & Safety Risk Analysis Methods

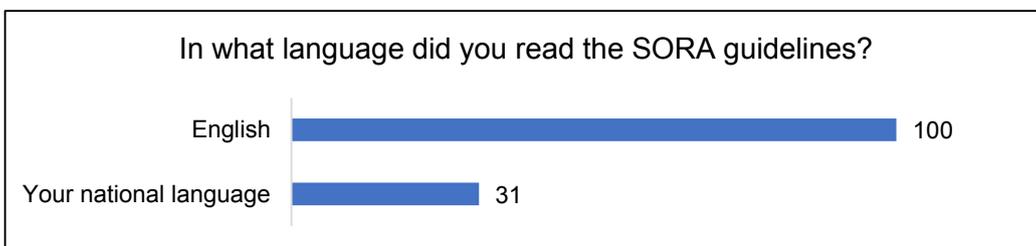
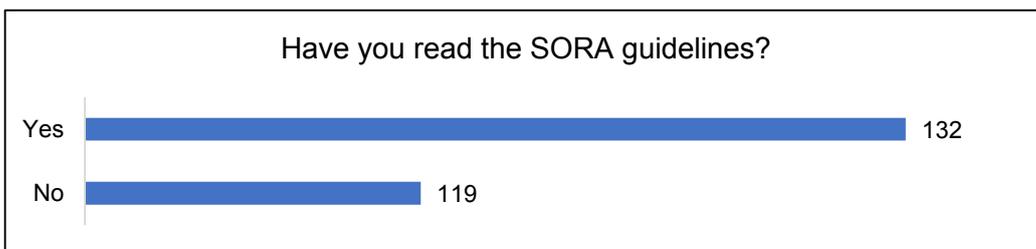
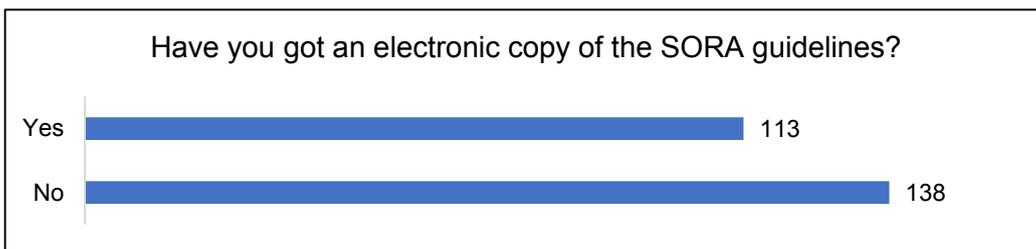
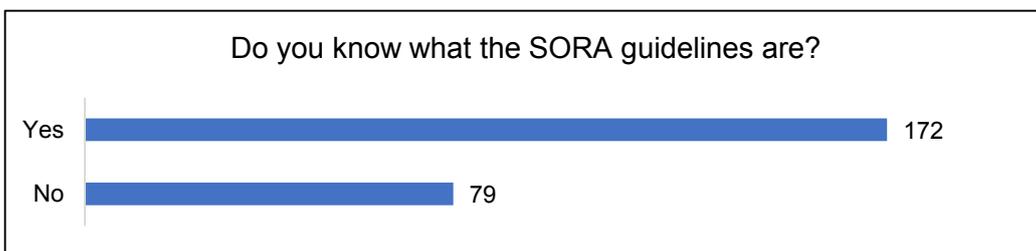
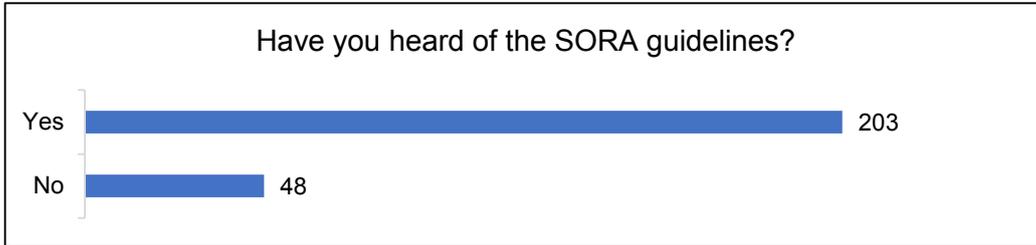
**ANNEX**

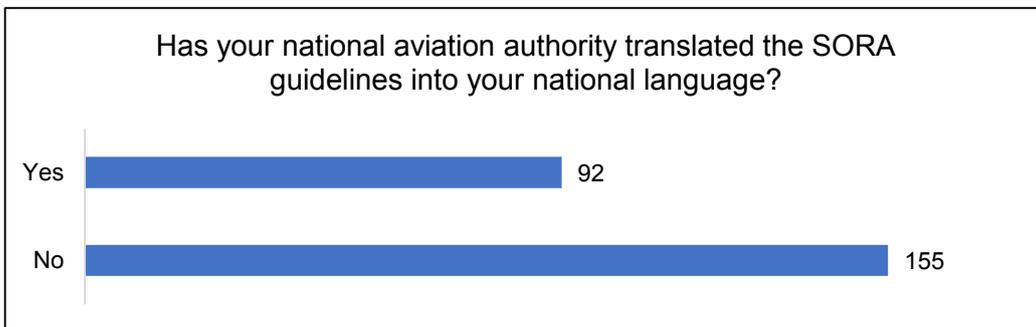
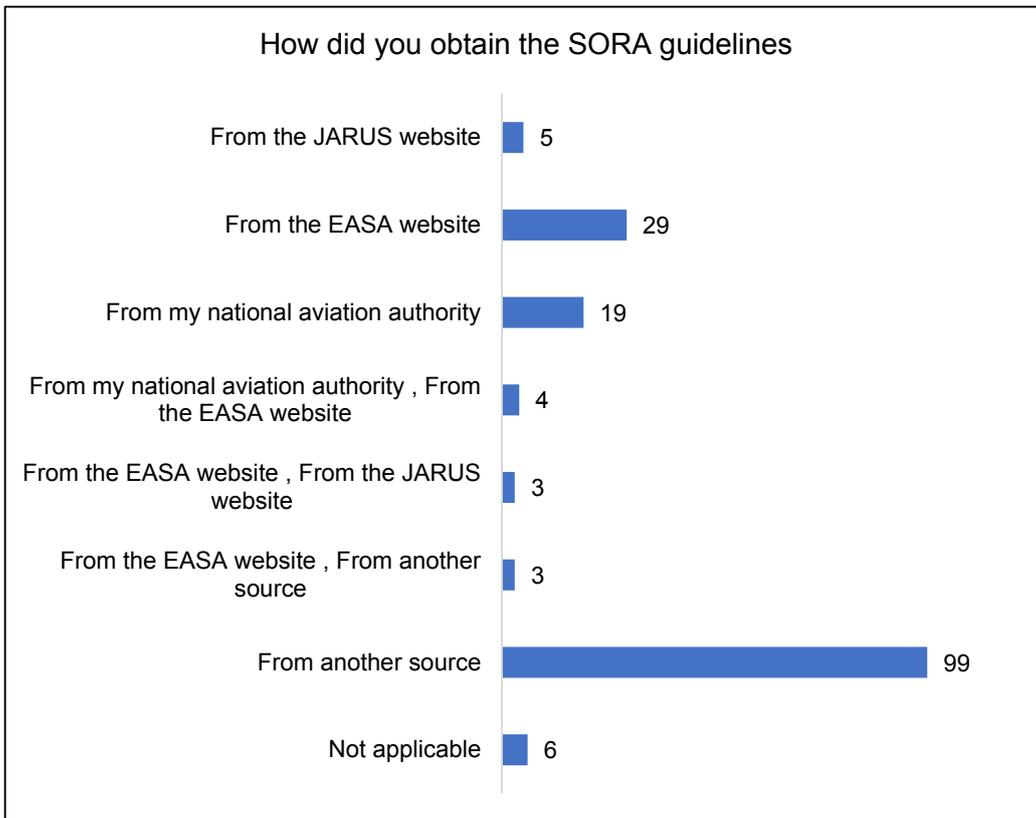
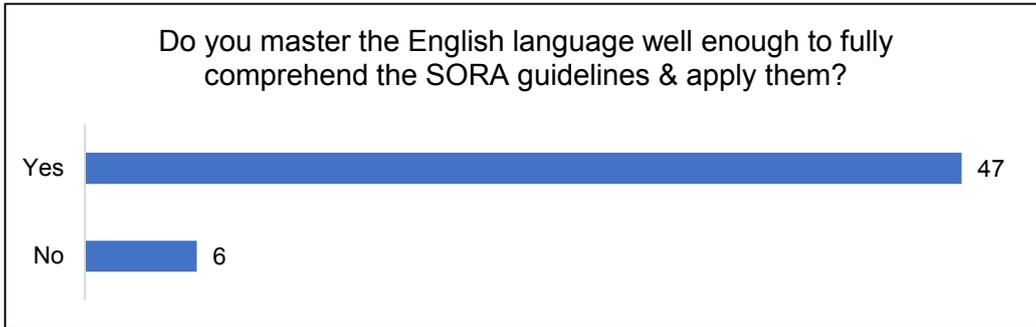
**PART 1 – UAS OPS**

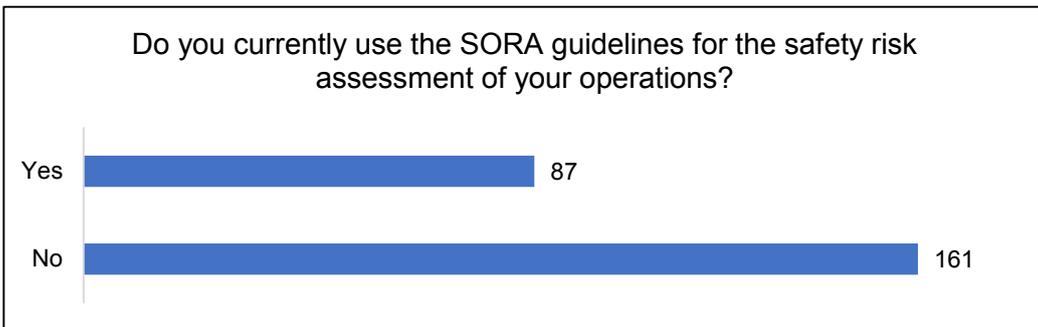
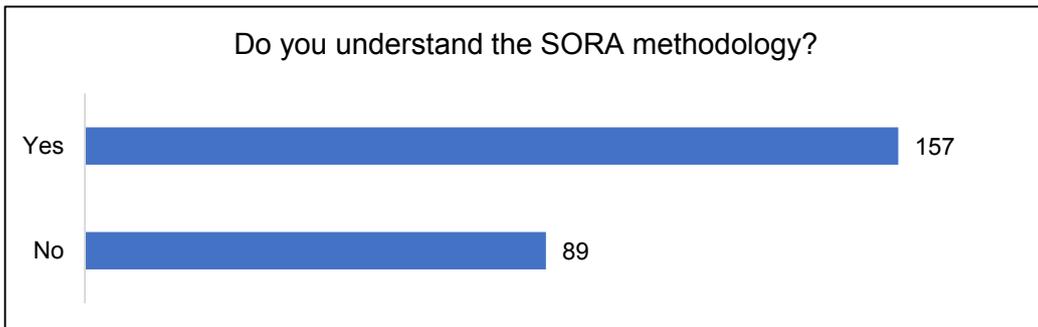
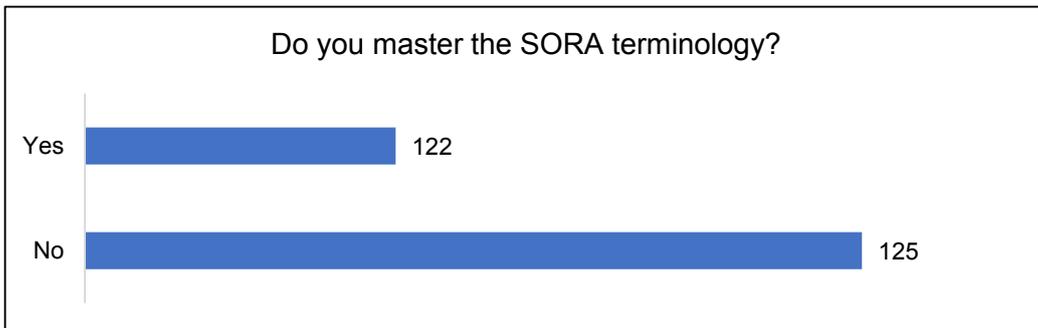
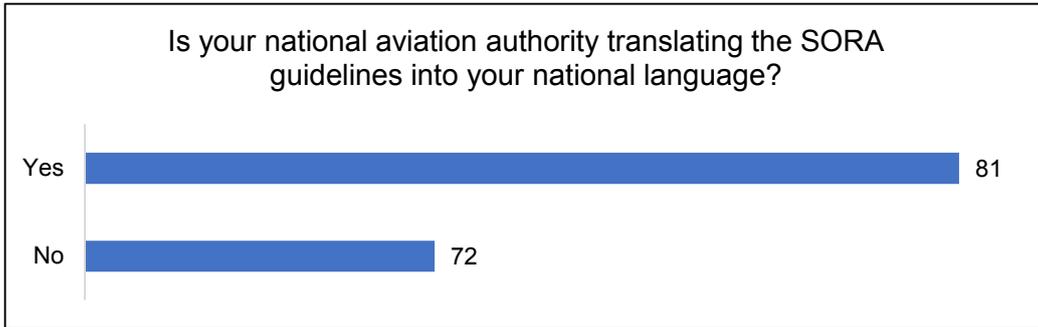
**SECTION 3**

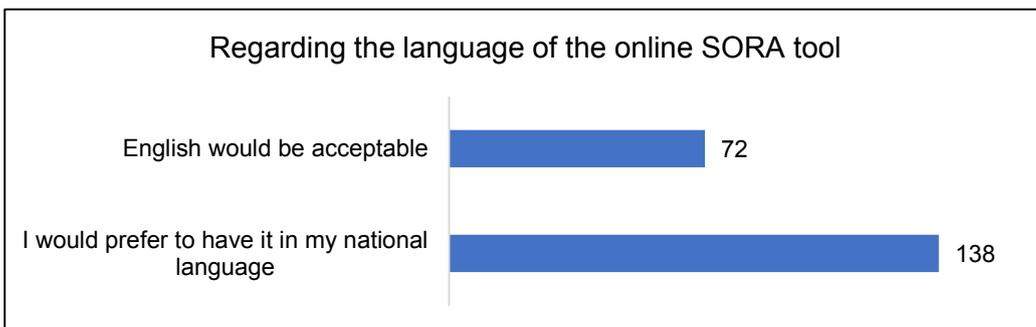
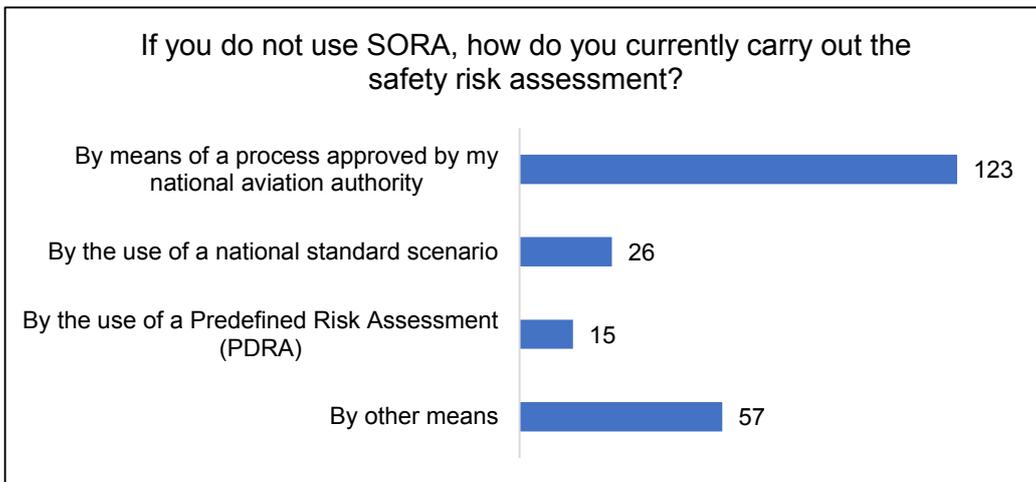
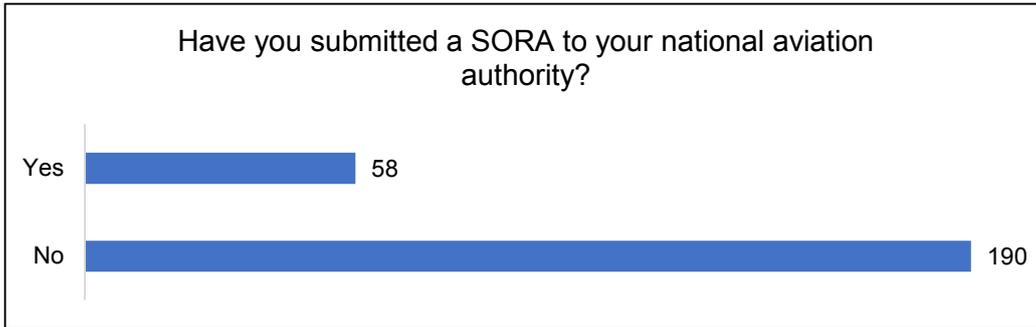
**RISK ANALYSIS METHODS**

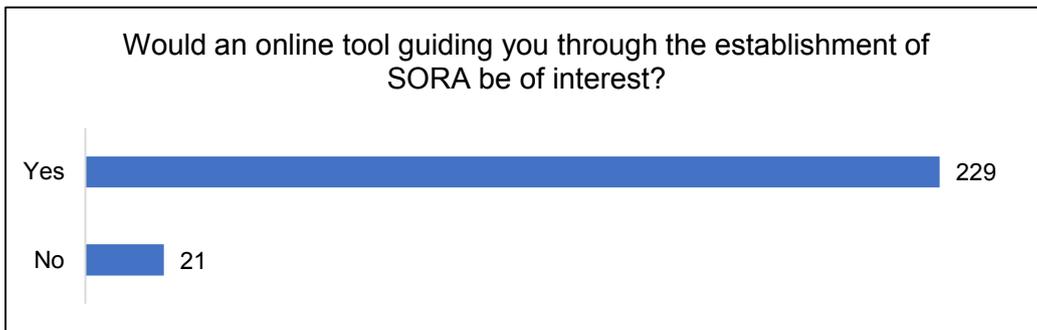
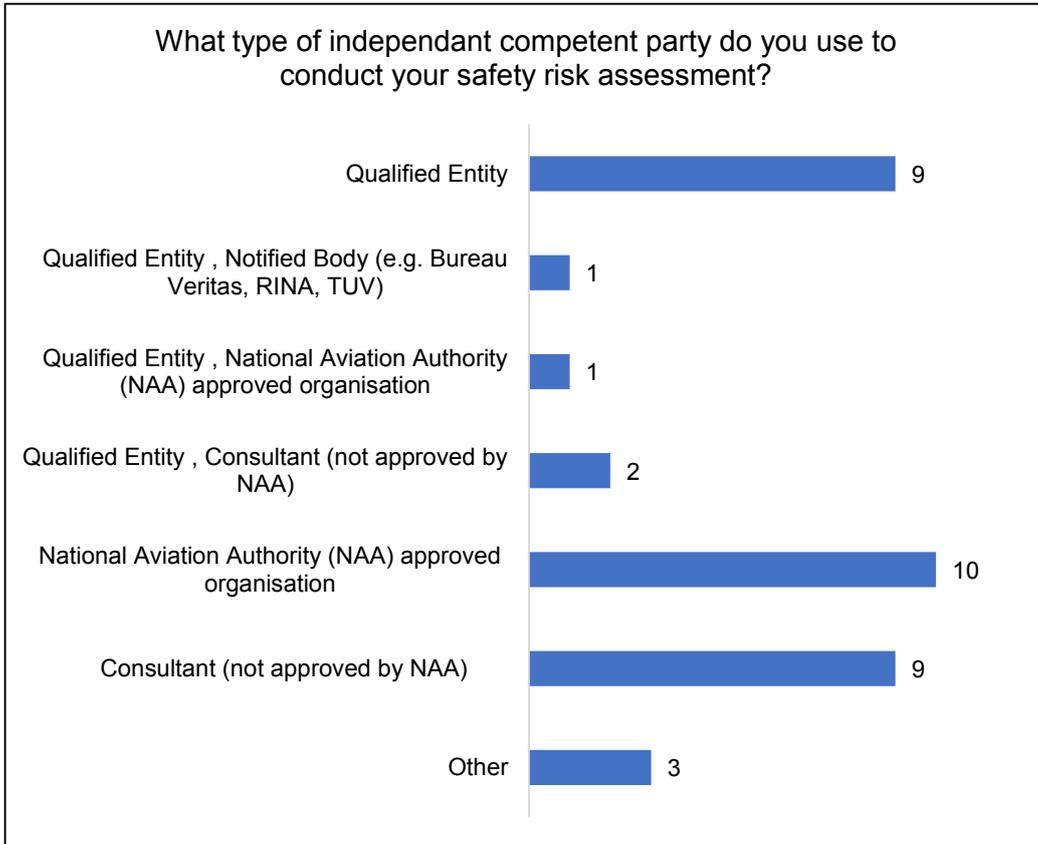
**SORA ACCESS & USE**











**ANNEX**

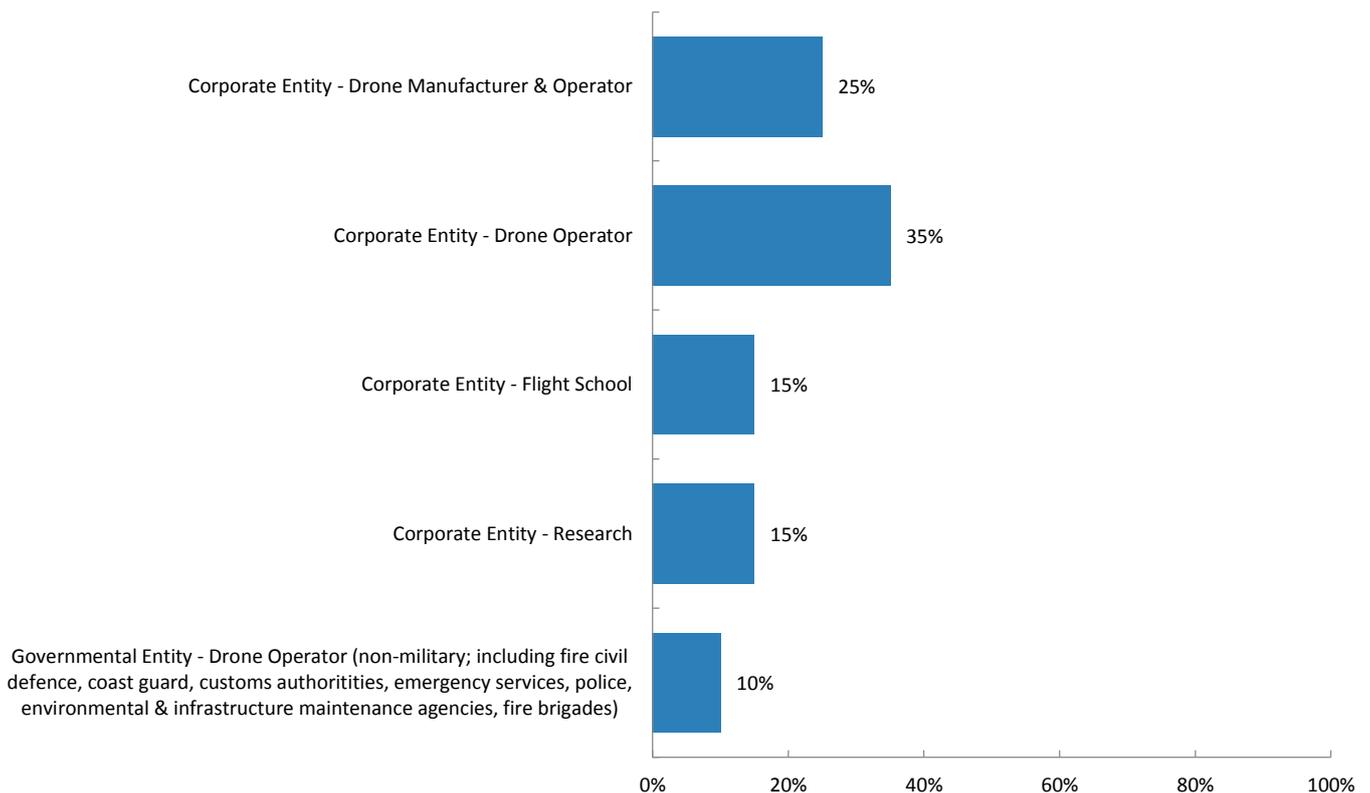
**PART 2 – OPS RISK**

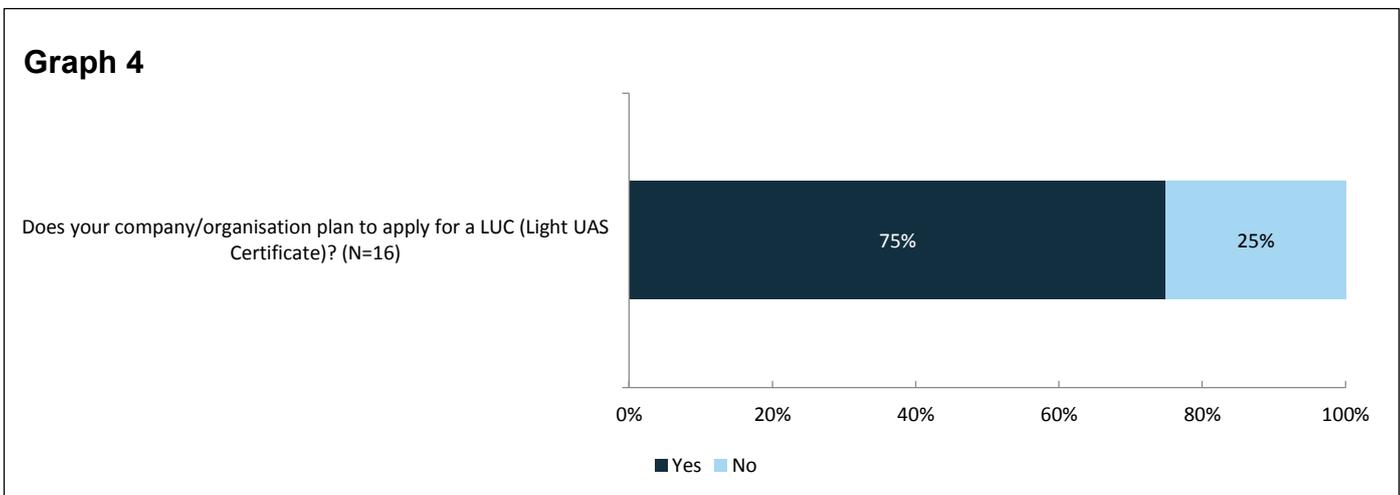
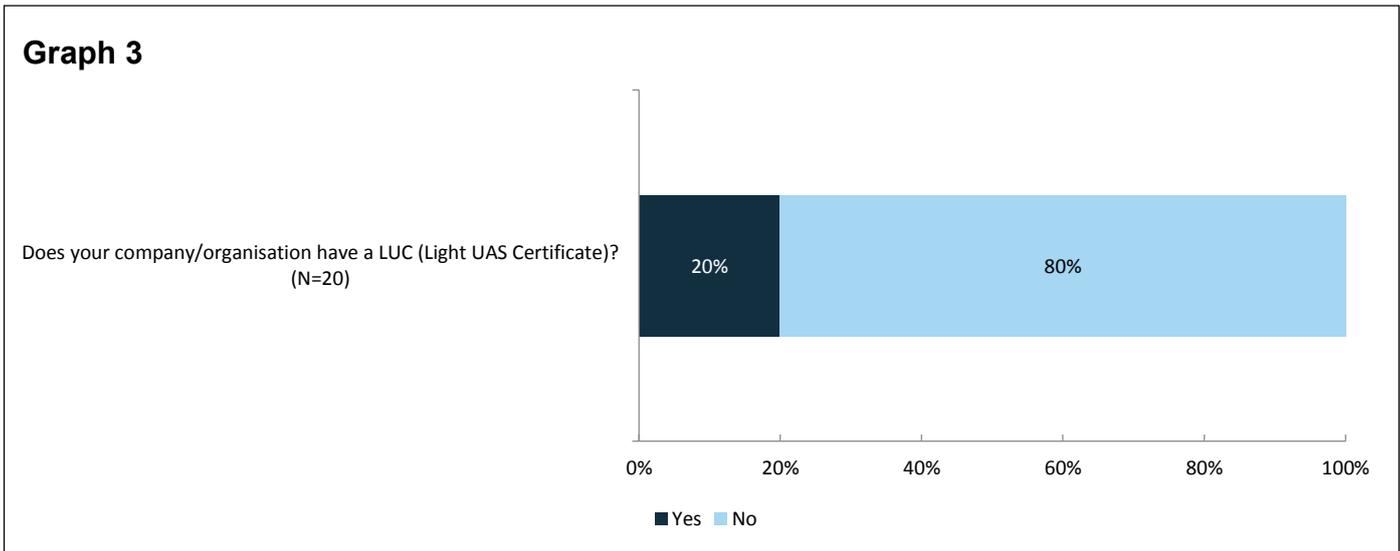
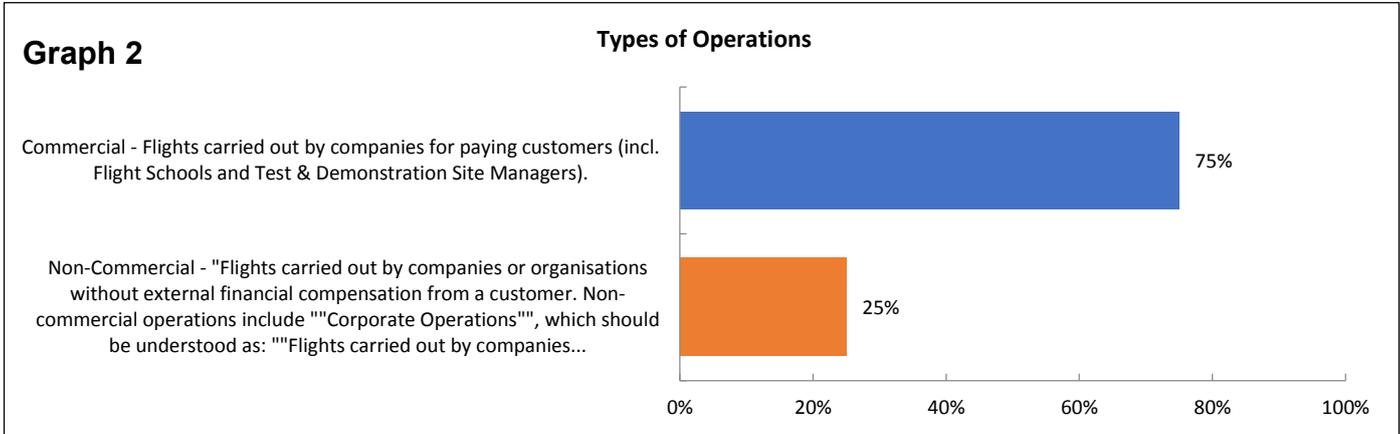
**PERCEPTION OF SORA**

**Table 1 The Contributors**  
(Qualified to contribute in function responses supplied in UAS OPS survey)

1	Goldy Aviarions	Belgium
2	DeltaCopter SRL	Belgium
3	UAS Consulting	Belgium
4	SKY FUN	Bulgaria
5	Unmanned Systems Bulgaria	Bulgaria
6	Dronotique	France
7	Kopter-Profi GmbH	Germany
8	Aerodrone (Ireland)	Ireland
9	Skyline	Italy
10	Operator X	Italy
11	Flyover di Vania Di Francesco	Italy
12	ANWB Medical Air Assistance	Netherlands
13	NLR	Netherlands
14	Drone Class	Netherlands
15	CNBOP-PIB	Poland
16	Civil Aviation Authority	Poland
17	Zangano	Spain
18	Nordluft	Sweden
19	Fotokite	Switzerland
20	Tethered Drone Systems Ltd	UK

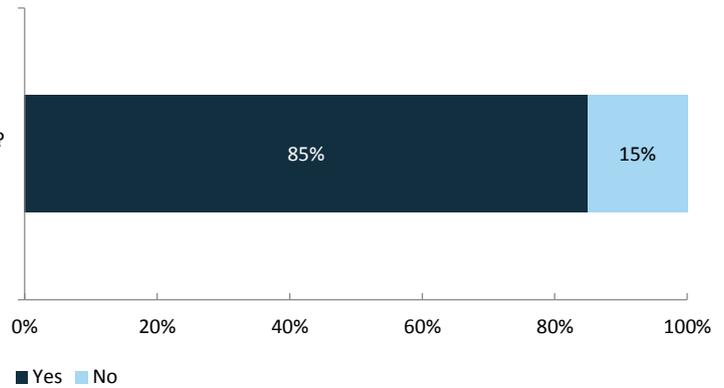
**Graph 1 Types of Operators**



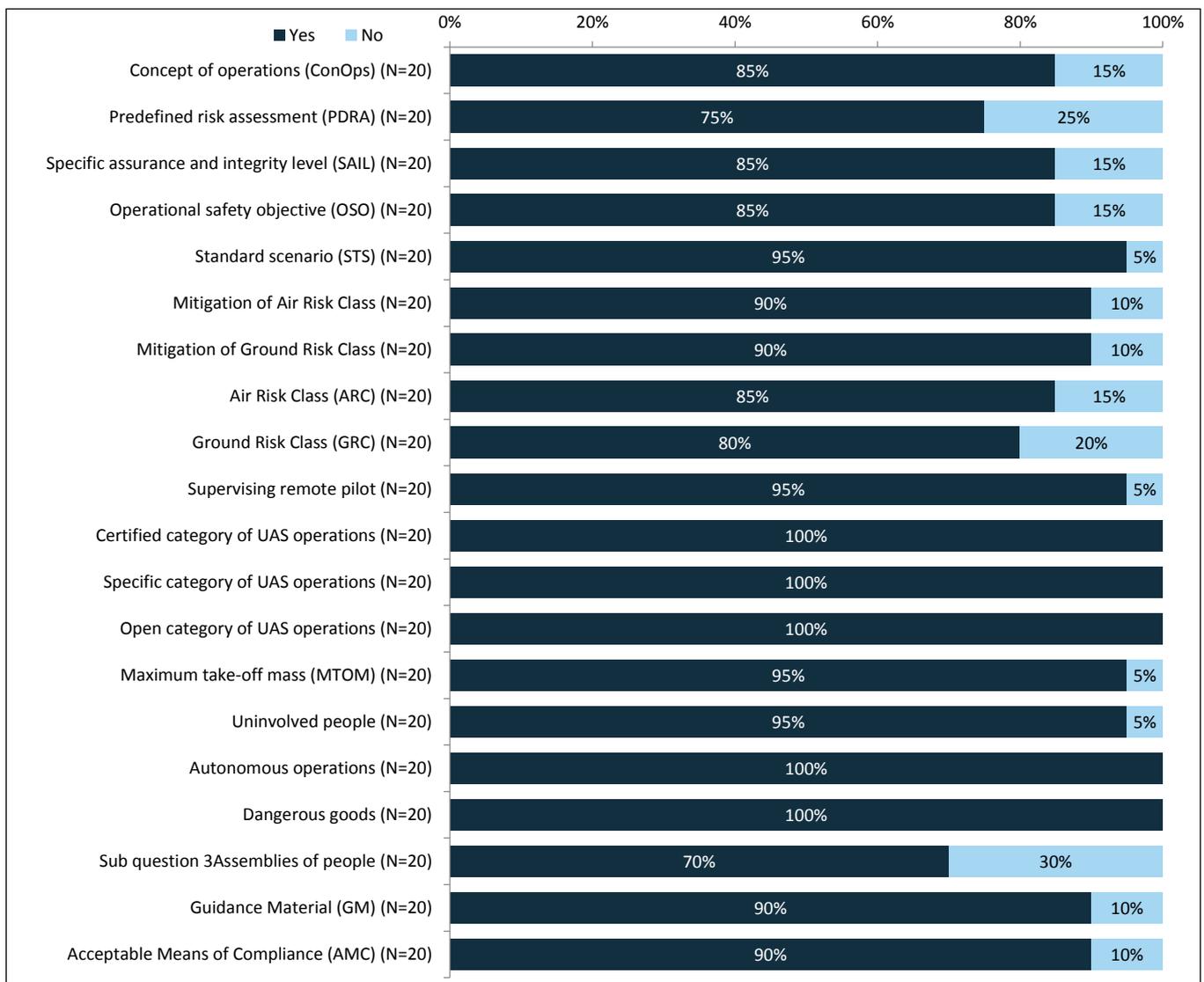


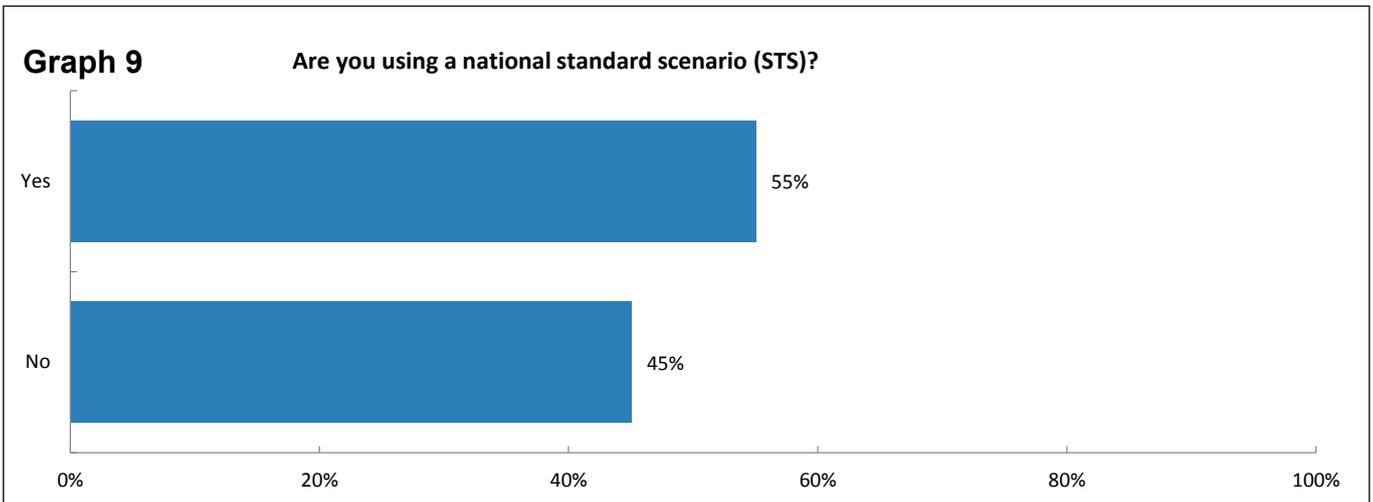
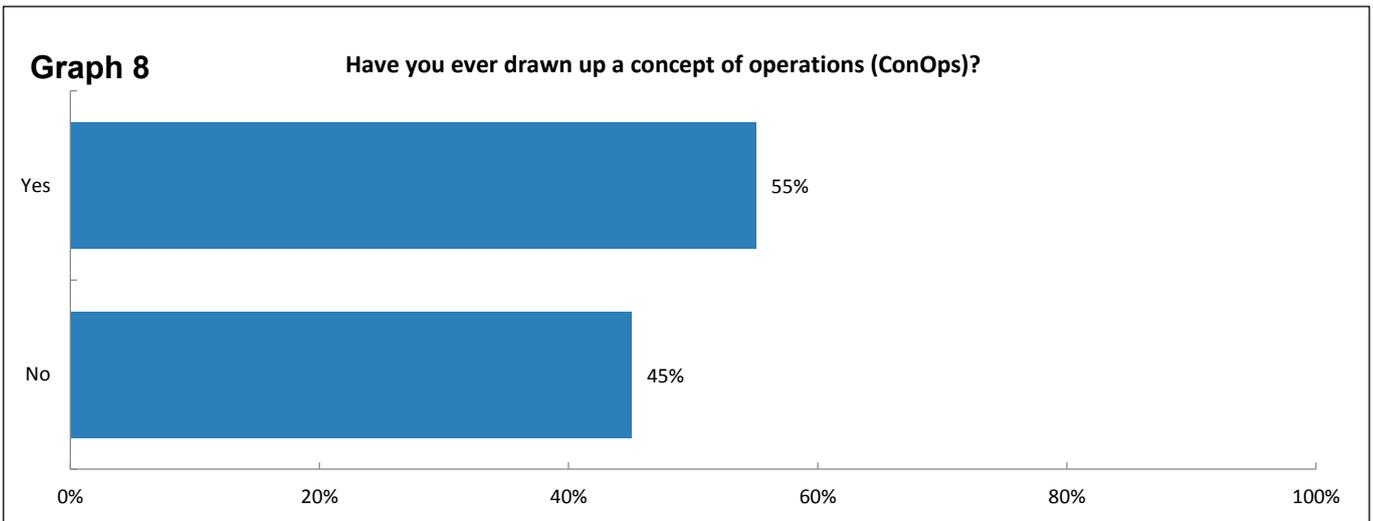
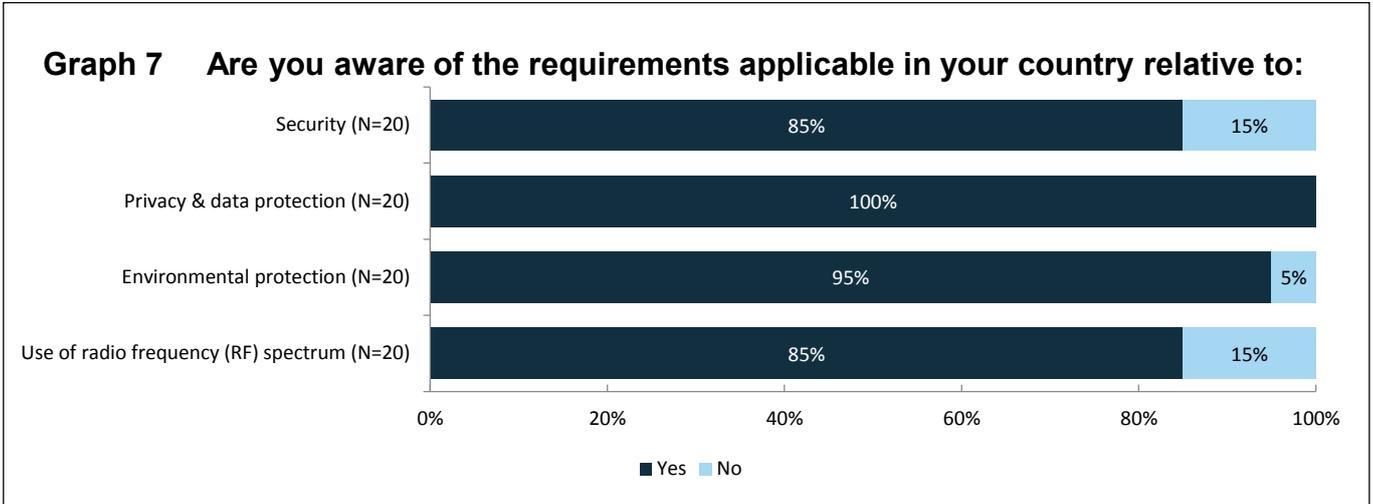
**Graph 5**

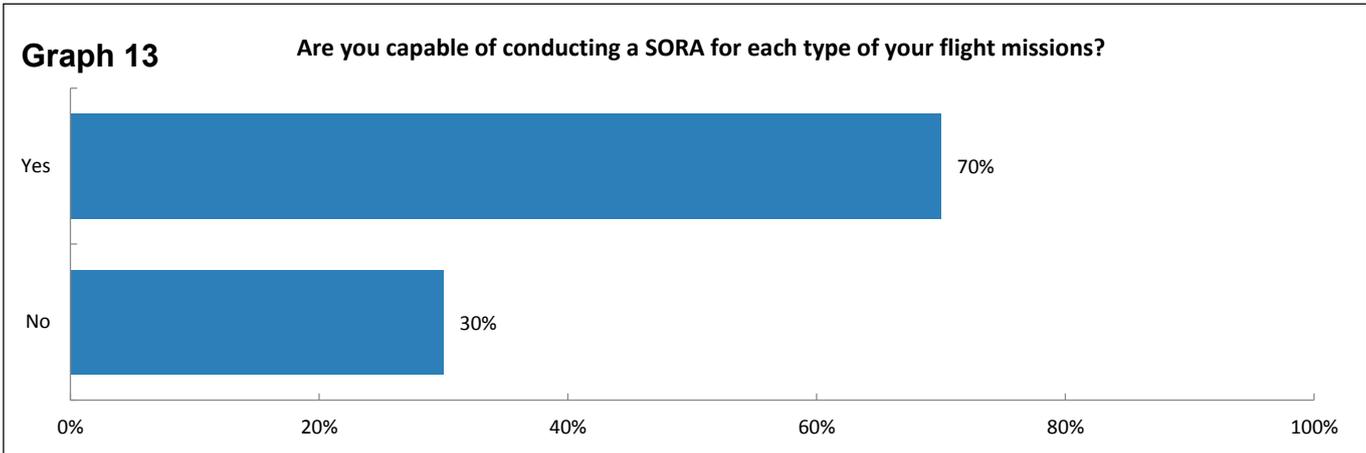
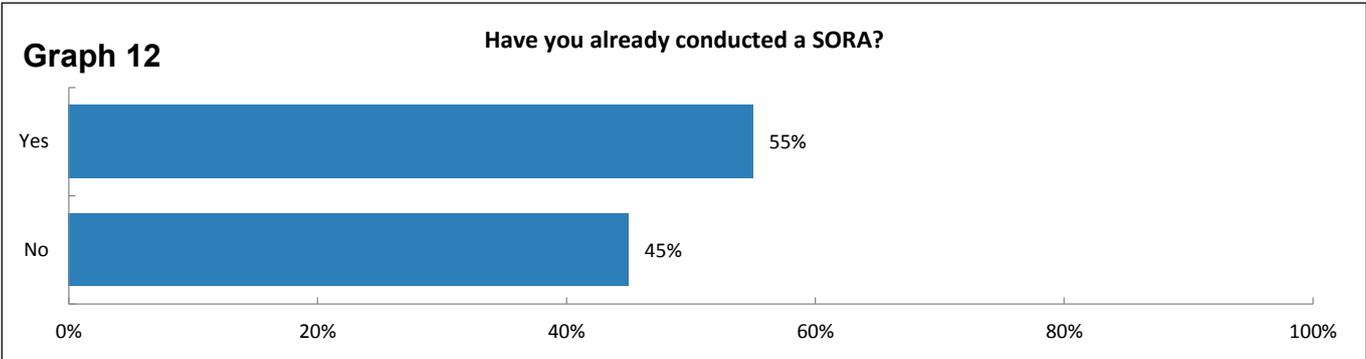
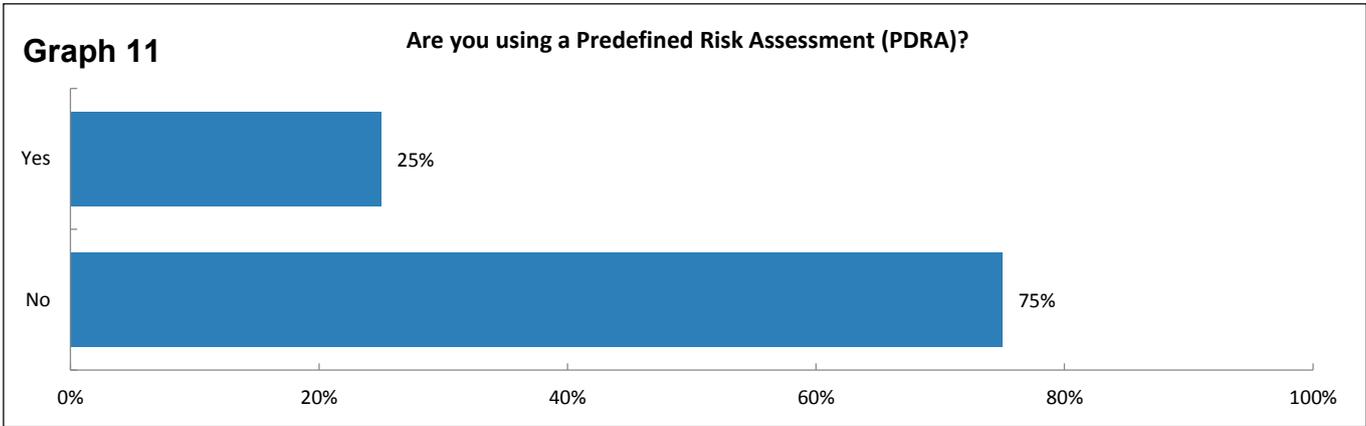
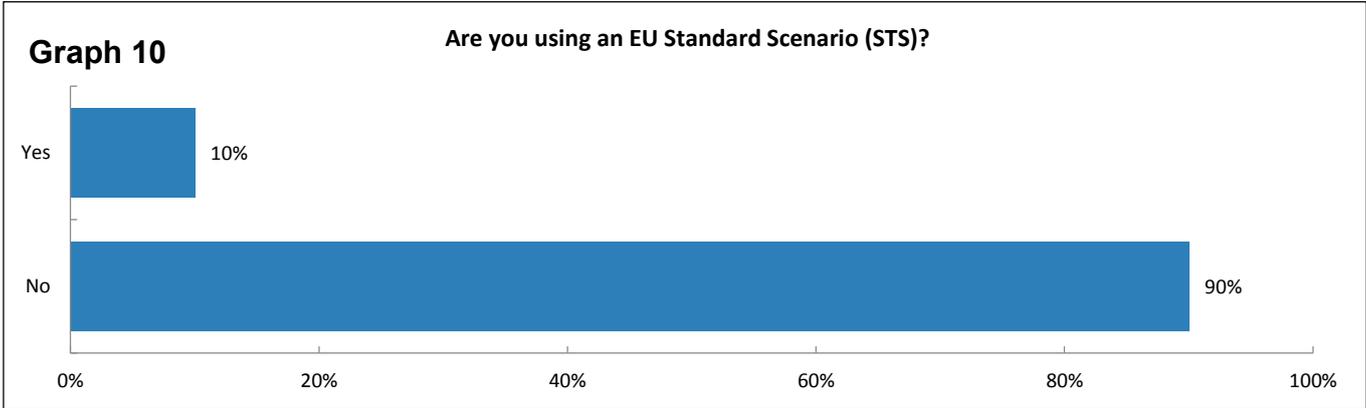
Is your company/organisation & its employees conversant in English?  
(N=20)



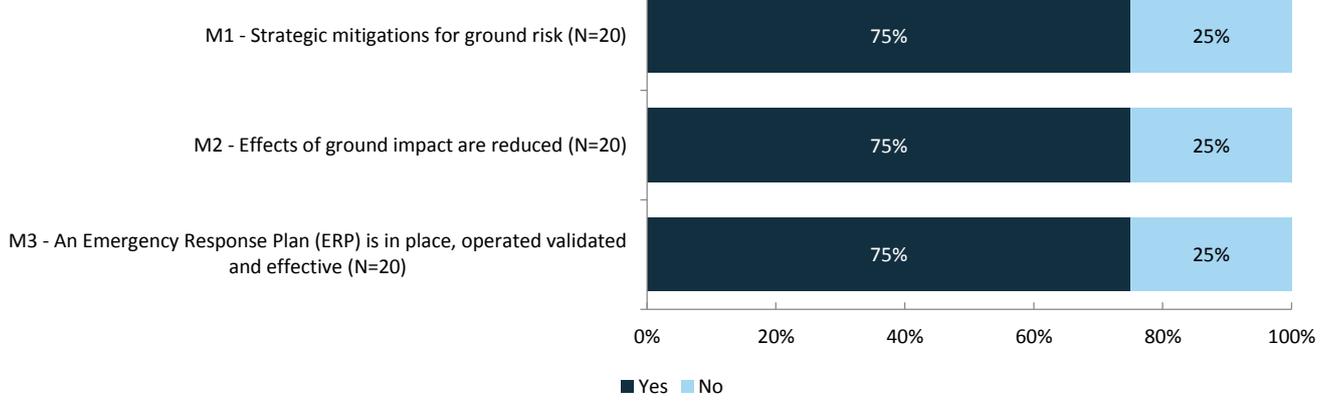
**Graph 6 Do you know what is meant by the following**



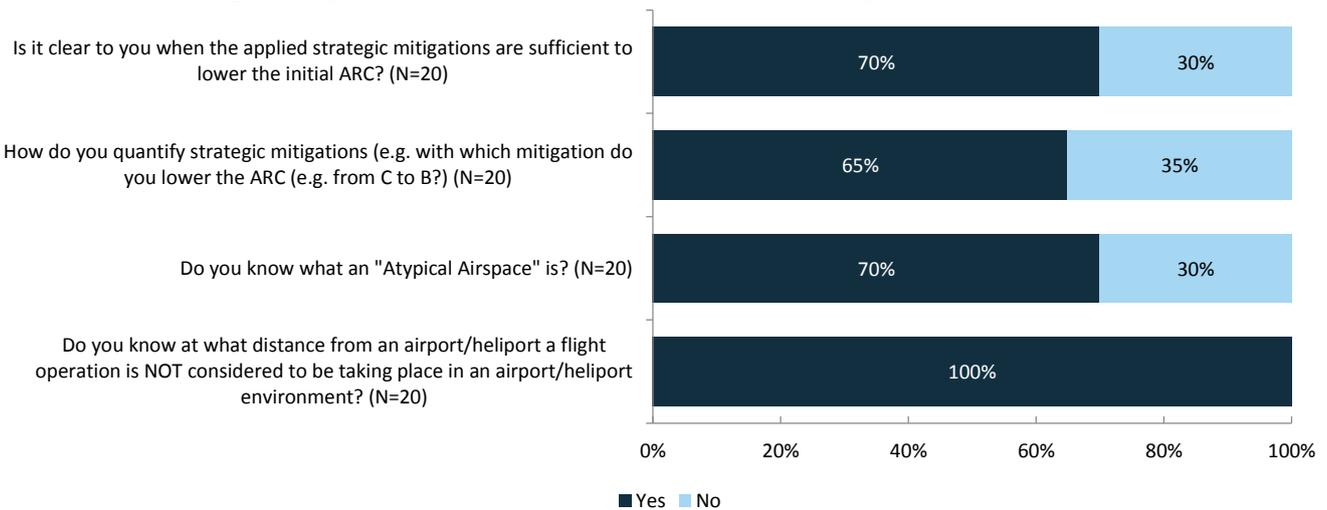




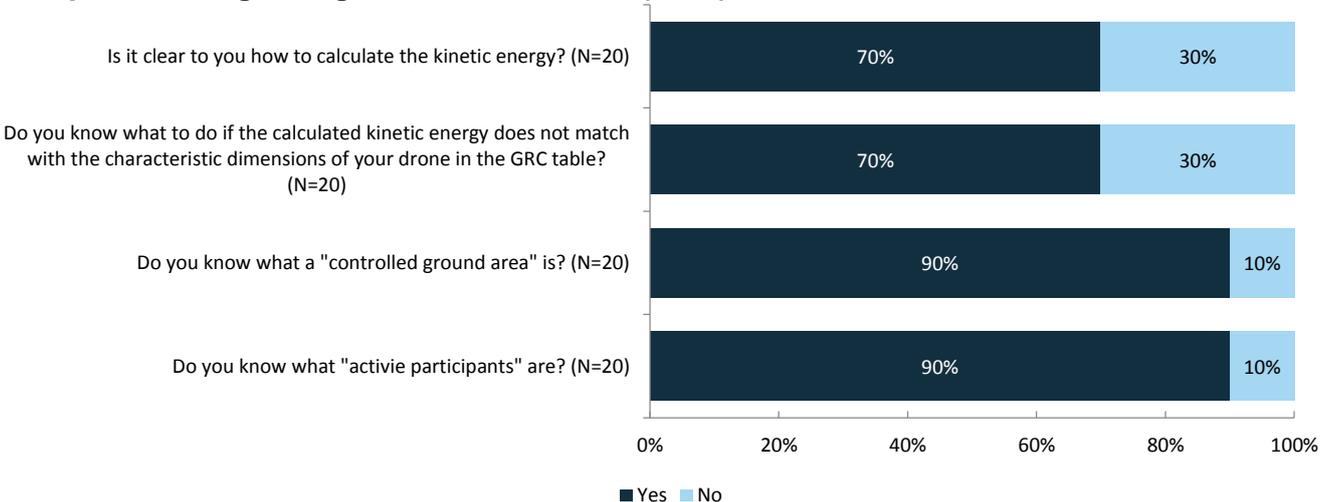
**Graph 14 Regarding the Ground Risk Class (GRC), do you know the strategies to be followed in view of the following:**



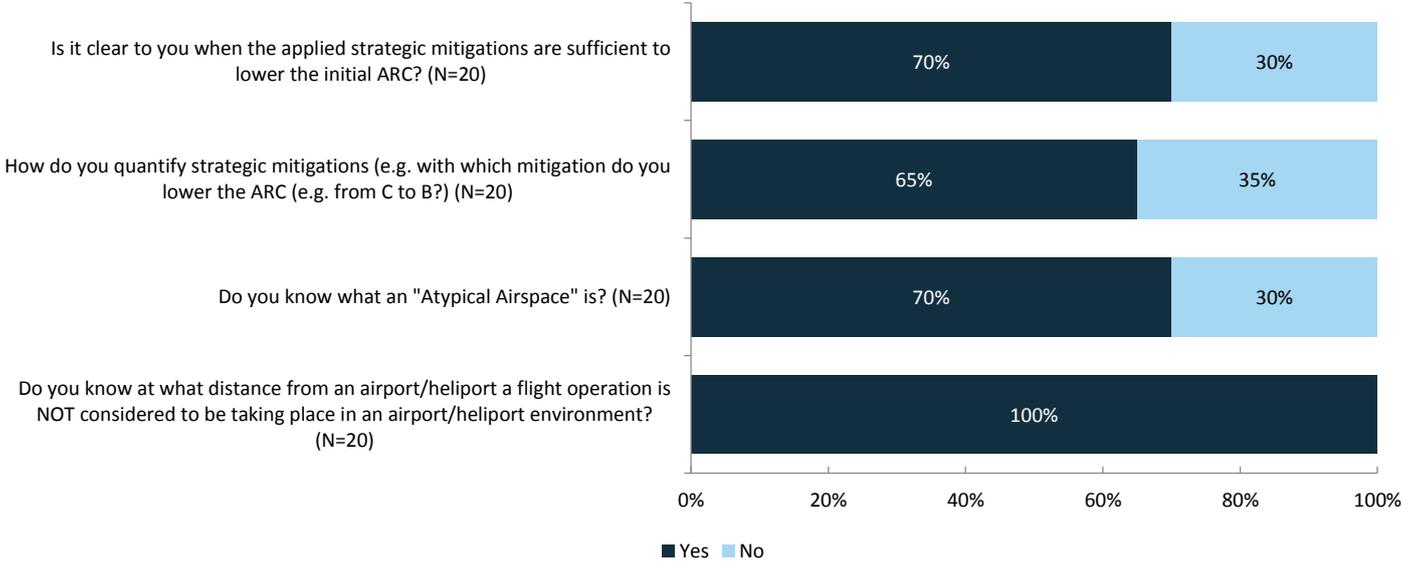
**Graph 15 Regarding the Ground Risk Class (GRC) mitigation:**



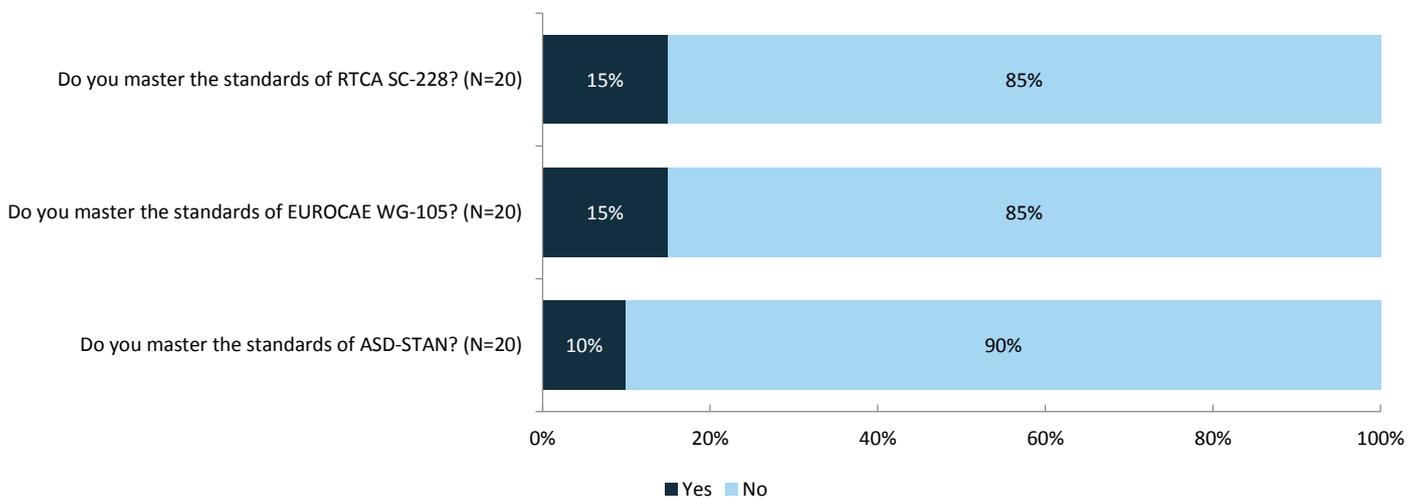
**Graph 16 Regarding the Air Risk Class (ARC):**



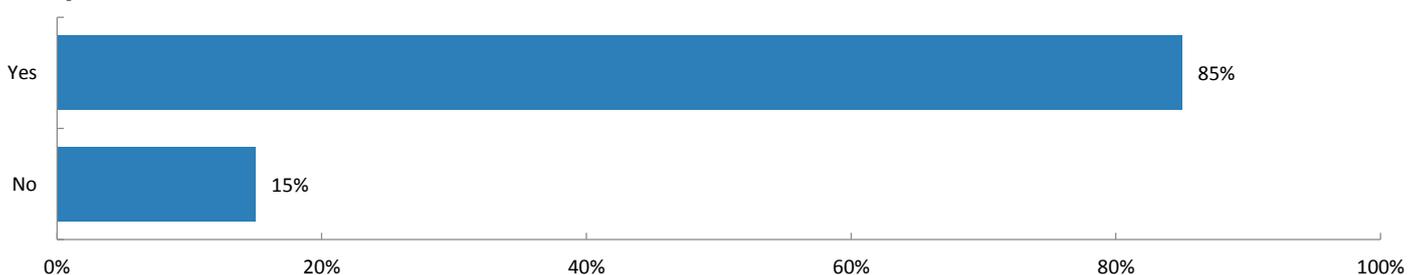
**Graph 17 Regarding the Air Risk Class (ARC):**



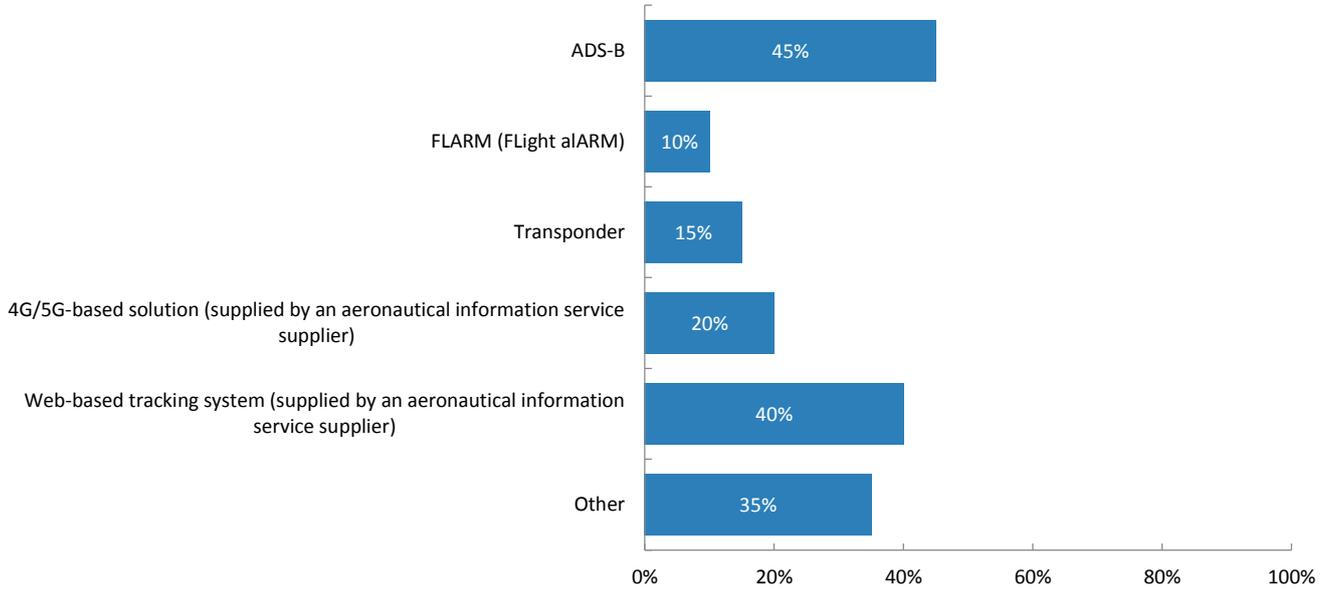
**Graph 18 Regarding the Air Risk Class (ARC) mitigation measures:**



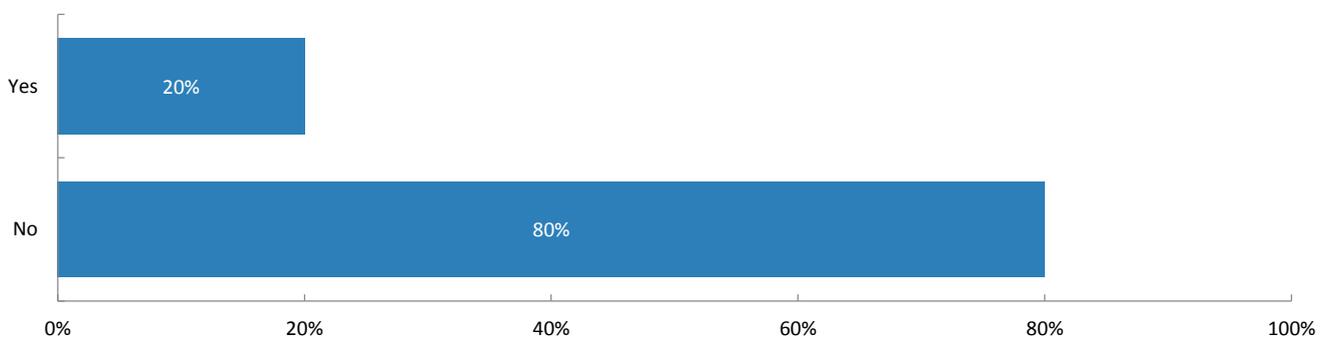
**Graph 19 Are you capable of determining if a flight operation is taking place in an "urban area"?**



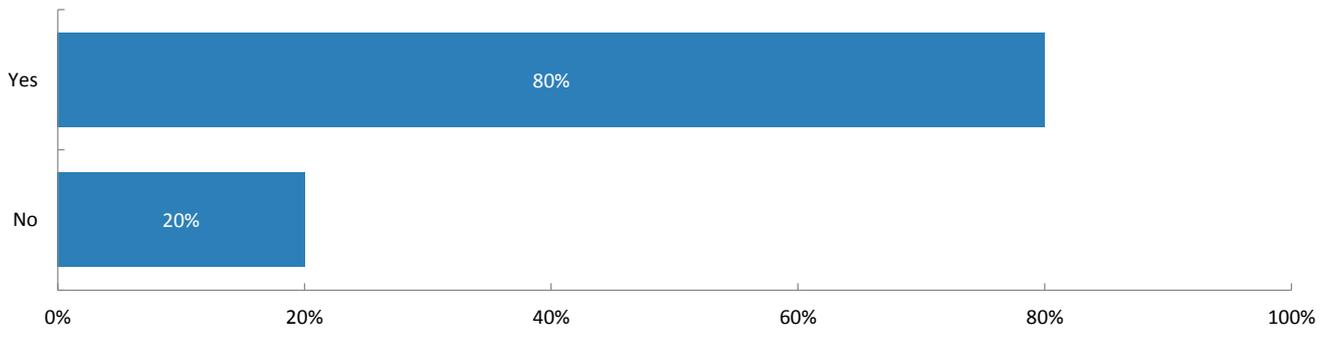
**Graph 20** Which means do you use to detect other aircraft in the operational airspace volume?



**Graph 21** In your opinion, can you detect all other air traffic in uncontrolled airspace?

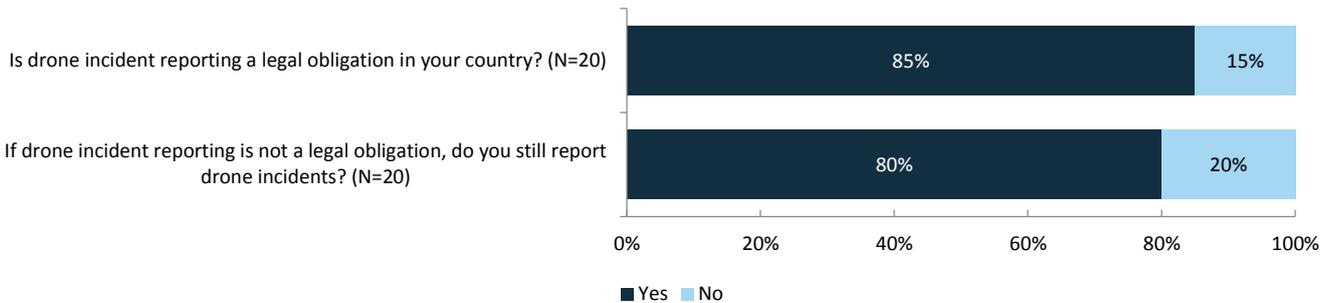


**Graph 22** Do you understand the requirements that are applicable to the adjacent area/airspace?



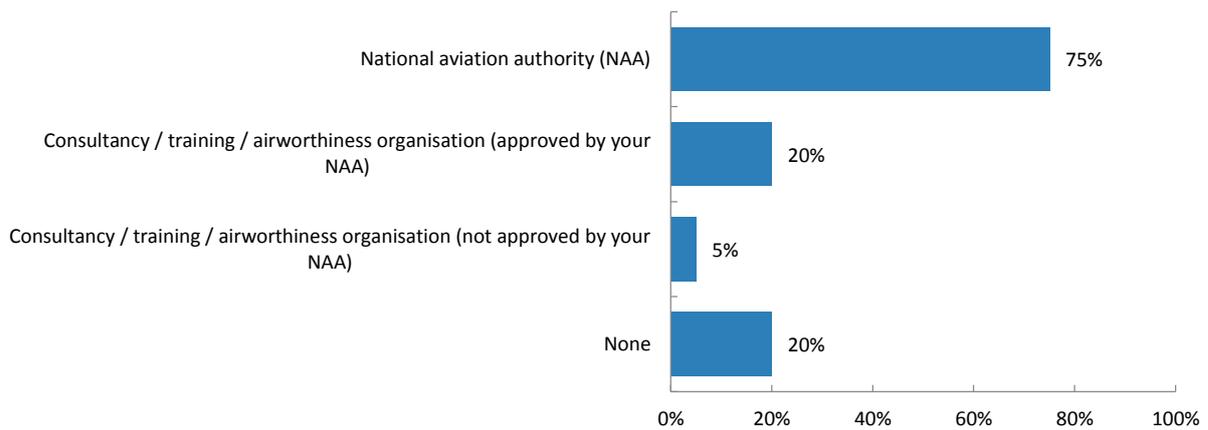
**Incident. An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.**

**Graph 23**

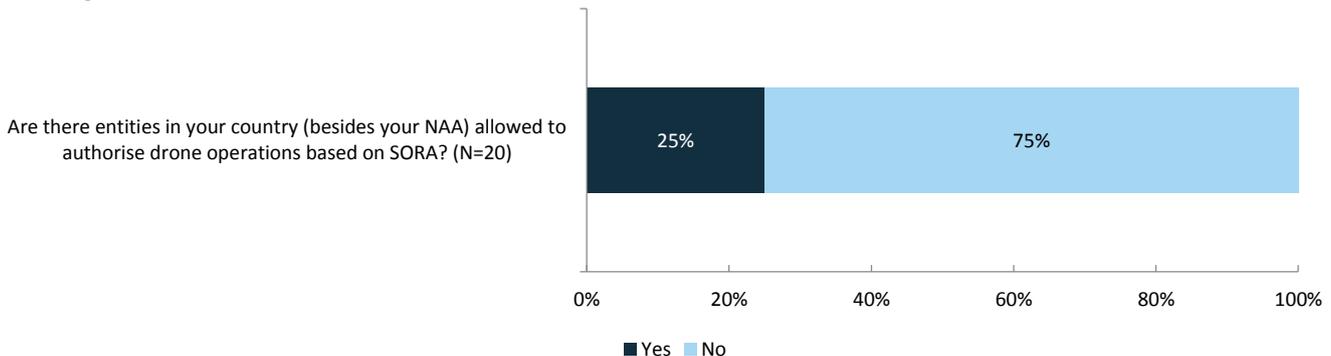


**Graph 24**

**What kind of third parties do you currently use when required by the OSO?**

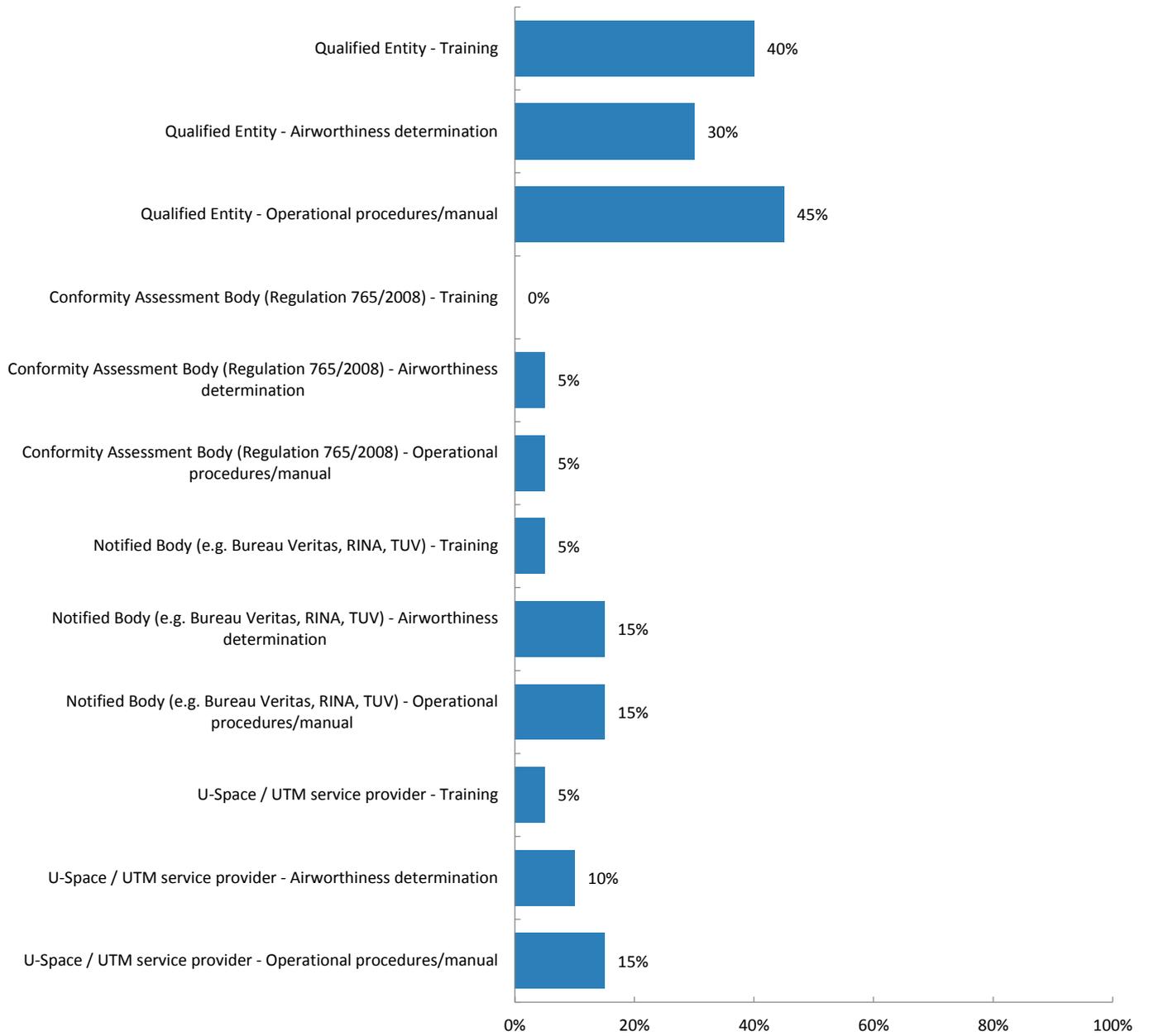


**Graph 25**

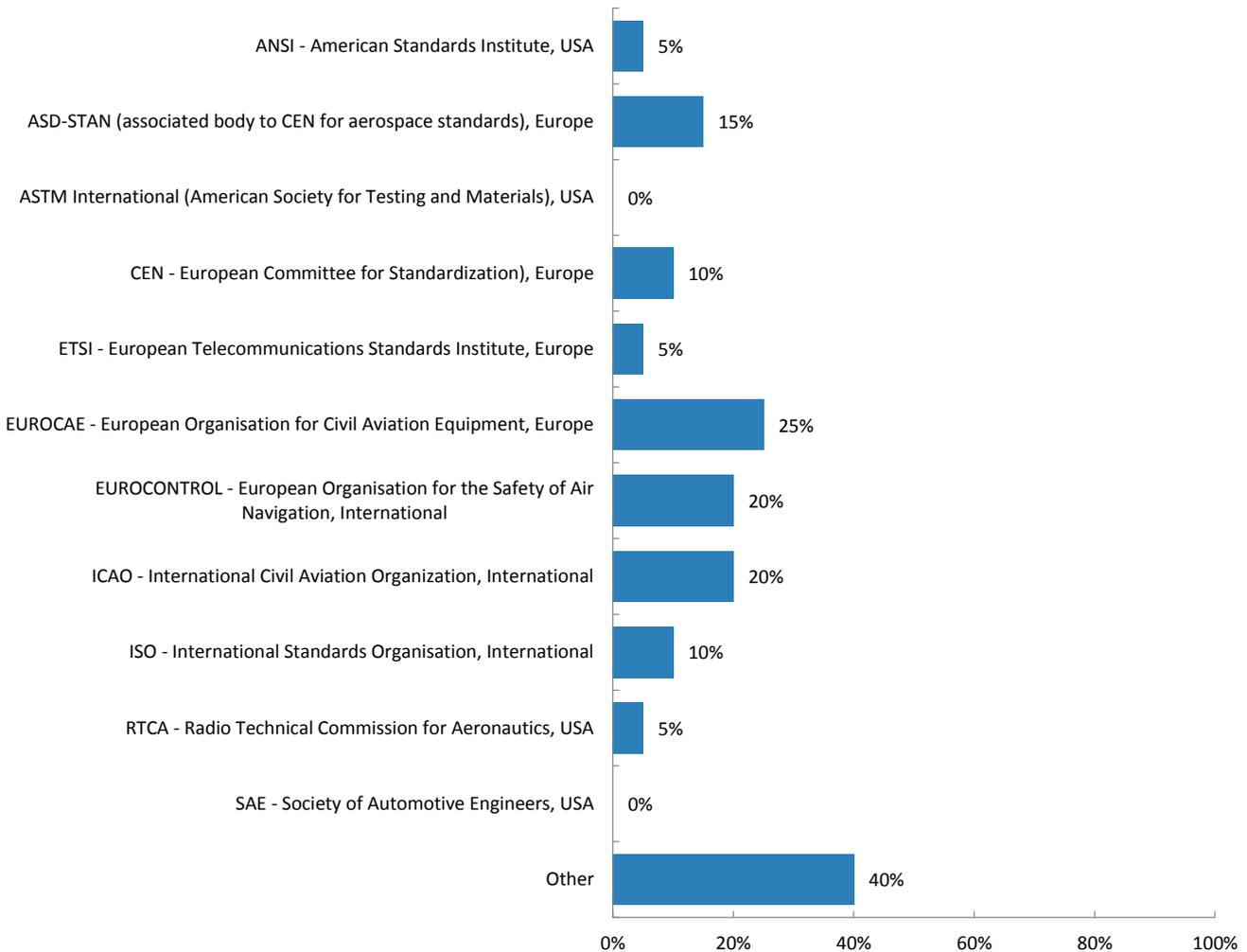


**Graph 26**

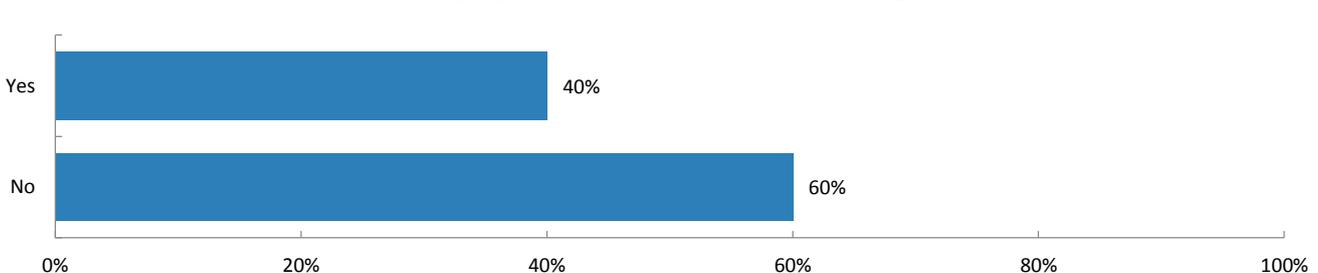
**Entities allowed to authorise drone operations based on SORA?**



**Graph 27** If you use SORA, from which organisation do you use standards to demonstrate compliance?

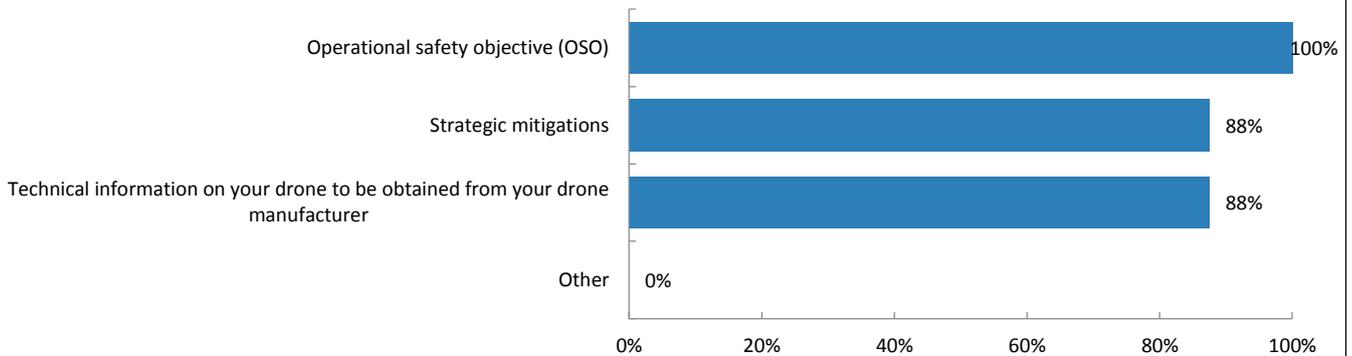


**Graph 28** If you currently use SORA, have you experienced difficulties in showing compliance with the required safety objectives due to the lack of standards/guidance material etc.?



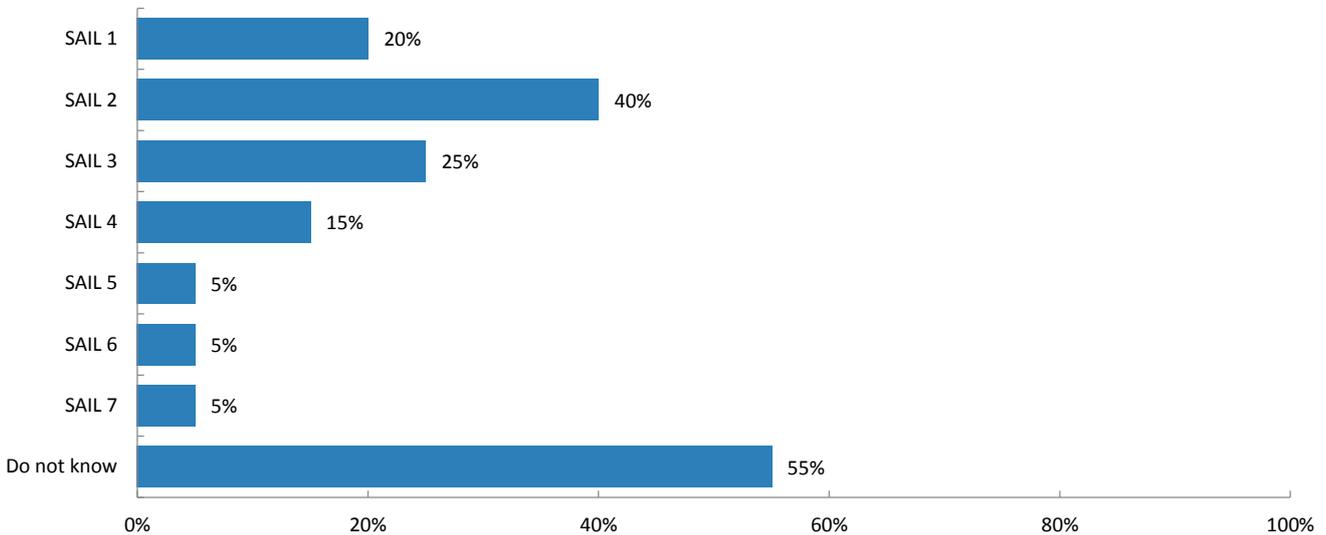
**Graph 29**

If you have experienced difficulties in showing compliance with the required safety objectives, indicate where you face these difficulties.



**Graph 30**

If you use SORA, to which SAIL level are your operations associated?



**Graph 31**

Up to which SAIL level can you currently demonstrate compliance?

