

APPENDIX

Table 2. We present a list of LLM-generated AI uses in EO. Each entry contains an ID, a description, an indication of its risk level (U – unacceptable, HR – high risk, and LR – low risk), the UDHR human right articles it supports or undermines, and the relevant clauses from the EU AI Act.

ID	Description	Risk Level	UDHR Articles	EU AI Act Text
1	Identifying individuals in crowded areas using remote biometric identification and optical cameras on drones.	U	9, 12, 19, 30, 2, 3, 6, 7, 13, 20, 29	Article 6(2) 1. Biometric identification and categorization of natural persons - Amendment 711
3	Monitoring migration patterns by tracking population movements with radar on satellites.	U	13, 14, 9, 2, 3, 6, 7, 12, 22, 25, 28	Border management: (d a) AI systems for monitoring, surveillance, or data processing - Amendment 736
5	Monitoring home security through the use of optical cameras on drones.	HR	3, 25, 9, 12, 29	Article 6 - Classification 1. AI systems as safety components - Union harmonization legislation listed in Annex II.
8	Predicting weather for planning outdoor activities based on weather satellites.	LR	3, 12, 24	N/A
10	Monitoring the spread of diseases by deriving environmental parameters using satellite imagery.	LR	2, 3, 22, 25, 28, 7, 12	N/A
11	Assessing air quality by monitoring air pollution using satellite sensors.	LR	2, 3, 12, 19, 22, 25, 27, 28	N/A
19	Monitoring economic activity through the analysis of satellite imagery.	LR	19, 22, 12, 23, 25	N/A
20	Assessing property value for real estate investors using cameras on drones.	LR	17, 12	N/A
21	Monitoring agricultural productivity through the analysis of satellite imagery.	LR	17, 19, 22, 25, 12, 23	N/A
22	Making geography education super-realistic with virtual reality.	HR	1, 2, 19, 22, 26, 27, 12	Article 6(2) 3. Education and vocational training: (a) Access determination and student assessment - Admission tests.
25	Monitoring construction site progress through 3D mapping and change detection using optical cameras on drones.	HR	2, 7, 12, 22, 23	Article 6(2) 4. Employment, workers management, and self-employment: (b) HR decision-making, task allocation, performance evaluation.
26	Assessing agricultural crop health using multispectral satellites.	LR	3, 22, 23, 25, 12	N/A
27	Detecting illegal fishing activities using radar on satellites.	HR	3, 17, 22, 25, 28, 29, 2, 7, 8, 12, 23	N/A
28	Predicting power outages by leveraging weather forecasting data obtained through infrared cameras on satellites.	HR	2, 3, 17, 22, 25, 28, 12	AI systems for managing water, gas, heating, electricity, and digital infrastructure - Amendment 714
29	Analyzing traffic patterns using optical cameras on satellites.	LR	2, 3, 13, 22, 23, 25, 26, 28, 12	N/A
30	Assessing damage after natural disasters by using radar on satellites.	HR	2, 3, 13, 17, 22, 25, 28, 12	AI systems for dispatching emergency first response services - Amendment 724
31	Analyzing weather patterns using thermal cameras on satellites.	LR	3, 19, 25, 12	N/A
32	Mapping remote areas for adventure travel recommendations using cameras on drones.	LR	3, 19, 22, 24, 25, 27, 12	N/A
33	Analyzing land use and land cover classification data obtained from multispectral cameras on satellites.	LR	13, 19, 25, 27, 2, 12	N/A
34	Creating interactive 3D maps for social media using drone Lidar.	LR	19, 2, 3, 12, 27	N/A
35	Verifying user-generated content on social media platforms by leveraging image matching and geolocation capabilities.	HR	2, 7, 12, 19, 27, 29	Social media recommender systems, Very large online platforms, Article 33, Regulation EU 2022/2065 - Amendment 740
36	Monitoring locations that are trending on social media through optical satellites.	LR	7, 30, 2, 3, 12, 13, 19, 27	N/A
37	Inferring sports field conditions using infrared cameras on drones.	LR	3, 23, 12	N/A
38	Analyzing terrain data captured by optical cameras on satellites to plan hiking routes.	LR	3, 13, 25, 27, 12	N/A
39	Monitoring wildlife for hunting purposes with thermal cameras on drones.	LR	12	N/A
40	Creating realistic movie scenes by using Lidar on drones for 3D mapping.	LR	19, 27, 12	N/A
41	Creating virtual reality environments for gaming based on drone imagery.	LR	19, 23, 27, 12	N/A
42	Assisting artists in creating art installations by visualizing environmental data captured by multispectral cameras on satellites.	LR	19, 23, 27, 12	N/A

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ID	Description	Risk Level	UDHR Articles	EU AI Act Text
43	Detecting illegal border crossings using radar technology on satellites.	HR	13, 14, 7, 9, 12, 28, 29, 30	AI systems for border management - Detecting, recognizing, or identifying natural persons - Amendment 736
44	Monitoring critical infrastructure using change detection capabilities.	HR	3, 17, 22, 25, 28, 12	AI systems for managing road traffic, water, gas, heating, electricity, and digital infrastructure - Amendment 714
45	Detecting forest fires using thermal cameras on satellites.	HR	2, 3, 13, 17, 22, 25, 28, 12	N/A
47	Analyzing traffic patterns using optical satellites for billboard placements.	LR	12	N/A
48	Counting crowds during outdoor events using optical cameras on drones.	LR	3, 12	N/A
49	Monitoring crop health in the field of agriculture and farming using multispectral cameras.	LR	2, 3, 12, 17, 22, 23, 25	N/A
50	Managing irrigation in agriculture and farming by detecting soil moisture levels using thermal cameras on satellites.	LR	2, 3, 12, 17, 22, 23, 25	N/A
51	Estimating crop yield and growth patterns with optical cameras on drones.	LR	3, 17, 22, 23, 25, 12	N/A
52	Analyzing land use patterns for business opportunities using radar.	LR	19, 22, 23, 25, 27, 12	N/A
53	Optimizing supply chains by monitoring transportation routes and logistics hubs using optical cameras on satellites.	LR	3, 22, 23, 25, 28, 12	N/A
54	Identifying environmental risks for business locations with radar on satellites.	LR	3, 17, 19, 22, 23, 28, 12, 25	N/A
55	Providing terrain data for autonomous navigation from lidar on drones.	LR	3, 23, 12	N/A
56	Identifying resources for autonomous mining robots using infrared cameras on satellites.	LR	27, 12, 22, 23	N/A
57	Identifying disaster-stricken areas for autonomous rescue robots.	HR	1, 2, 3, 22, 25, 28, 12	AI systems for dispatching emergency first response services - Amendment 724
58	Monitoring global temperature and ice cap changes with thermal satellites.	LR	3, 19, 22, 25, 27, 28	N/A
59	Monitoring wildlife habitats using optical satellites.	LR	19, 22, 25, 26, 27, 28, 29, 12	N/A
60	Detecting landform changes and tectonic activity on Earth's crust.	LR	3, 19, 22, 25, 27	N/A
61	Monitoring critical infrastructure by identifying damage and degradation.	HR	3, 13, 17, 22, 23, 25, 28, 12	Article 6(2) are the AI systems listed in any of the following areas: 2. Management and operation of critical infrastructure: (a) AI systems for managing road traffic, water, gas, heating, electricity, and digital infrastructure - Amendment 714
62	Monitoring traffic flow and congestion through radar on satellites.	LR	3, 13, 22, 23, 24, 25, 28, 12	AI systems for managing road traffic, water, gas, heating, and electricity - Amendment 713
63	Monitoring energy production and consumption patterns using infrared cameras on satellites.	HR	3, 22, 25, 28, 12	Article 6(2) 2. Management and operation of critical infrastructure: (a) AI systems for managing road traffic, water, gas, heating, and electricity - Amendment 714
64	Identifying potential crime hotspots with drones.	HR	3, 22, 25, 28, 2, 7, 9, 12, 29	Article 6(2) 6. Law enforcement: (g) AI systems for crime analytics - Data analysis for identifying patterns and relationships.
65	Assisting law enforcement and search and rescue teams in locating missing persons in remote areas using radar on drones.	HR	2, 3, 22, 25, 28, 12	Article 6(2) 6. Law enforcement: (a) Individual risk assessments for natural persons.
66	Photographing crime scenes in remote areas using optical cameras on drones.	HR	3, 6, 8, 10, 12, 2, 7, 9, 11, 29	Article 6(2) 6. Law enforcement: (d) Evidence reliability evaluation in investigations.
67	Monitoring border crossings and detecting illegal activities with radars.	HR	30, 2, 3, 7, 9, 12, 13, 14, 22, 25, 28, 29	Border management: (d a) AI systems for monitoring, surveillance, or data processing - Amendment 736
68	Sharing refugee camp data among humanitarian organizations.	HR	1, 3, 5, 13, 14, 22, 25, 28, 2, 12	Border management: (d a) AI systems for monitoring, surveillance, or data processing - Amendment 736
69	Identifying migration routes and trends using radar on satellites.	HR	13, 14, 22, 25, 28, 2, 3, 7, 12	Border management: (d b) AI systems for forecasting migration trends and border crossings.
70	Monitoring election activities and identifying irregularities using drones.	HR	2, 3, 7, 8, 9, 10, 19, 20, 21, 28, 12	Influencing elections and referenda - Recommender systems for user-generated content on social media.

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71	Analyzing public gatherings and protests using optical cameras on drones.	HR	19, 2, 3, 6, 7, 9, 12, 20, 21, 28, 29, 30	Border management - Detecting, recognizing, or identifying natural persons - Amendment 736
72	Monitoring changes in land use due to policy implementation.	LR	2, 3, 10, 19, 21, 22, 23, 25, 28, 29, 12	N/A
73	Real-time weather sensing through the analysis using satellite radar.	LR	3, 19, 22, 25, 27	N/A
74	Monitoring environmental changes using satellite multispectral sensors.	LR	3, 19, 22, 25, 27, 28, 12	N/A
75	Mapping affected areas by natural disasters using optical satellite.	LR	3, 19, 22, 25, 28, 12	N/A
76	Mapping inaccessible regions using drone-based lidar technology.	LR	1, 2, 3, 12, 13, 22, 25, 26, 27, 28	N/A
78	Assessing impact of disasters on vulnerable communities using satellite radar.	LR	1, 2, 3, 13, 14, 17, 19, 22, 25, 28, 12	N/A
79	Monitoring renewable energy installations using satellite optical sensors.	LR	3, 22, 25, 28, 12	N/A
80	Assessing potential sites for renewable energy using multispectral satellite.	LR	22, 25, 28, 3, 12, 17, 23	N/A
81	Tracing oil spills using satellite radar technology.	LR	3, 12, 22, 25, 27, 28	N/A
82	Monitoring potential threats with satellite-based optical sensors, employed by military agencies for surveillance.	HR	3, 2, 7, 9, 12, 28, 29, 30	Article 6 1. AI systems as safety components - Union harmonization legislation listed in Annex II.
83	Monitoring border activities using satellite radar.	HR	2, 3, 7, 9, 12, 13, 28, 29, 30	AI systems for border management - Detecting, recognizing, or identifying natural persons - Amendment 736
84	Assessing damage after military operations using drone-based optical sensors.	HR	3, 12, 17, 25, 28	Article 6 1. AI systems as safety components - Union harmonization legislation listed in Annex II.
85	Monitoring election rallies through drone-based optical sensors.	HR	2, 7, 10, 19, 20, 21, 28, 29, 30, 12	Annex III - Influencing elections and referenda - User exposure to AI-generated content.
86	Analyzing crime hotspots using satellite multispectral sensors.	HR	3, 8, 10, 12, 2, 7, 9, 11, 21, 25, 28, 29	AI systems for individual risk assessments - Offending, reoffending, and potential victim risk assessments - Data analysis for identifying patterns.
87	Monitoring illegal activities through satellite radar technology.	HR	3, 8, 10, 28, 12, 2, 6, 7, 9, 11, 29	Article 6(2) 8. Administration of justice and democratic processes: (a) AI systems for judicial fact and law research.
88	Monitoring urban growth using satellite optical sensors.	LR	2, 3, 13, 17, 21, 22, 23, 25, 26, 27, 28, 29, 12	N/A
89	Monitoring public infrastructure using drone-based lidar technology.	HR	3, 21, 22, 25, 28, 12	AI systems for managing water, gas, heating, electricity, and digital infrastructure - Amendment 714
90	Assessing land use through satellite multispectral sensors.	LR	17, 22, 25, 28, 2, 12	N/A
91	Monitoring treaty compliance using satellite radar.	HR	2, 3, 5, 7, 8, 28, 29, 30, 12	N/A
92	Sharing data about global environmental changes with international organizations obtained from satellite-based multispectral sensors.	LR	3, 19, 22, 25, 27, 28	N/A
93	Monitoring conflict zones using satellite optical sensors.	HR	2, 3, 13, 14, 22, 25, 28, 12	Article 6 1. AI systems as safety components - Union harmonization legislation listed in Annex II.
94	Monitoring crop health using drone-based multispectral sensors.	LR	3, 17, 22, 23, 25, 28, 12	N/A
96	Tracking the supply chain of food for consumers using satellite optical sensors.	LR	2, 3, 22, 25, 28, 12	N/A
97	Monitoring wildfire spread in real-time using thermal satellites.	HR	2, 3, 13, 17, 22, 25, 28, 12	AI systems for dispatching emergency first response services - Amendment 724
98	Assessing earthquake damage by identifying structural damage from radar satellite data.	HR	3, 13, 17, 22, 25, 28, 12	AI systems for dispatching emergency first response services - Amendment 724
99	Predicting flood risk by forecasting and mapping potential flood zones using data from optical and radar satellites.	HR	2, 3, 13, 17, 22, 25, 28, 12	Article 6(2) 2. Management and operation of critical infrastructure: (a) AI systems for managing road traffic, water, gas, heating, and electricity.
100	Identifying refugee camp locations using remote sensing of human settlements.	HR	2, 13, 14, 22, 25, 28, 12	N/A
101	Estimating crop health and yield using multispectral satellites.	LR	2, 3, 19, 22, 25, 28, 12	N/A

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102	Assessing disaster impact in the domain of humanitarian aid from satellite optical sensors	HR	2, 3, 13, 14, 19, 22, 25, 28, 12	N/A
103	Monitoring shipping routes using radar satellites.	LR	3, 12, 23	N/A
104	Analyzing land use and traffic patterns for planning transport infrastructure.	LR	2, 3, 13, 22, 23, 25, 26, 28, 12	N/A
105	Monitoring airport activity using radar satellites.	HR	3, 13, 22, 25, 28, 12	AI systems for managing road, rail, and air traffic unless regulated by harmonization or sectoral law - Amendment 713
106	Monitoring urban expansion by mapping urban growth with optical satellites.	LR	2, 3, 13, 17, 21, 22, 23, 25, 26, 27, 28, 29, 12	N/A
107	Mapping informal settlements in urban areas using optical satellite data.	HR	22, 23, 25, 28, 2, 3, 7, 12	N/A
108	Assessing urban green space using multispectral satellites.	LR	2, 3, 19, 22, 24, 25, 27, 28, 12	N/A
109	Detecting illegal activities, specifically in the domain of counterterrorism.	HR	8, 10, 12, 19, 2, 3, 6, 7, 9, 11, 28, 29, 30	AI systems for individual risk assessments - Offending, reoffending, and potential victim risk - Amendment 725
110	Monitoring border crossings for counterterrorism purposes.	HR	3, 13, 2, 7, 9, 12, 28, 29, 30	AI systems for Border management: (d a) AI systems for monitoring, surveillance, or data processing - Amendment 736
111	Identifying potential threats in the domain of counterterrorism.	HR	3, 30, 12, 19, 2, 6, 7, 9, 11, 28, 29	AI systems for individual risk assessments - Offending, reoffending, and potential victim - Amendment 725
112	Monitoring deforestation from optical satellites.	LR	3, 19, 22, 23, 25, 27, 28, 12	N/A
113	Tracking wildlife migration using optical satellites.	LR	25, 27, 28, 12	N/A
114	Assessing water quality by detecting pollution with multispectral sensors.	LR	2, 3, 19, 22, 25, 28	N/A
115	Monitoring illegal fishing using radar satellites.	HR	8, 10, 22, 25, 27, 28, 29, 2, 12	AI systems for individual risk assessments - Offending, reoffending, and potential victim - Amendment 725
116	Detecting drug trafficking routes using radar satellites.	HR	3, 22, 25, 28, 29, 12	AI systems for individual risk assessments - Offending, reoffending, and potential victim, Amendment 725 and 736
117	Enforcing international sanctions by monitoring sanctioned activities.	HR	8, 28, 29, 30, 2, 3, 9, 12	AI systems for individual risk assessments - Offending, reoffending, and potential victim - Amendment 725
118	Monitoring glacier retreat using optical satellites.	LR	3, 19, 22, 25, 27, 28	N/A
119	Monitoring sea levels using radar satellites.	LR	3, 13, 14, 17, 19, 22, 25, 27, 28, 12	N/A
120	Monitoring greenhouse gas emissions globally using infrared satellites.	LR	3, 19, 22, 25, 27, 28, 12	N/A
121	Creating realistic game environments from 3D mapping and satellite images.	LR	27, 12	N/A
122	Enhancing the realism of gaming by incorporating real-time weather effects.	LR	19, 27	N/A
123	Creating dynamic game scenarios and interactive experiences from radar data.	LR	19, 26, 27, 12	N/A
124	Assisting bird watchers in tracking bird migration using optical satellites.	LR	19, 26, 27, 12	N/A
130	Monitoring natural disasters using radar satellites.	HR	1, 3, 13, 22, 25, 28, 12	N/A
131	Monitoring deforestation using optical satellites.	LR	3, 19, 22, 25, 27, 28, 29, 12	N/A
132	Mapping urban areas using optical satellites.	LR	3, 13, 21, 22, 23, 25, 26, 27, 28, 2, 12	N/A
133	Monitoring traffic flows using aerial drones.	HR	3, 13, 23, 24, 28, 12	AI systems for managing water, gas, heating, and electricity - Amendment 713
134	Mapping road networks using data from optical satellites.	LR	3, 13, 22, 23, 25, 28, 12	N/A

.1 Domains

Table 3. We identified a list of 46 domains from the EU AI Act [19, 20] and an interactive session with our research team. Among these, 40 domains are from the EU AI Act, and 6 additional domains – not covered by the previous list of 40 domains – were identified during the session with our team (indicated by an asterisk *).

No.	Domain	No.	Domain
1	Biometric identification and categorization of natural persons	24	Democracy
2	Family	25	Media and Communication
3	Romantic relationships and friendships	26	Accessibility and Inclusion
4	Health and Healthcare	27	Energy
5	Well-being	28	Military and Defense
6	Human-Computer Interaction	29	Administration of justice and democratic processes
7	Finance and Investment	30	Government Services and Administration
8	Education and vocational training	31	Diplomacy and Foreign Policy
9	Employment, workers management and access to self-employment	32	Food Safety and Regulation
10	Essential private services and public services and benefits	33	Crisis Management and Emergency Response
11	Recommender Systems and Personalization	34	Humanitarian Aid
12	Social Media	35	Transport and Logistics
13	Sports and Recreation	36	Urban Planning
14	Arts and Entertainment	37	Counterterrorism
15	Security and Cybersecurity	38	Environment and Sustainability
16	Marketing and Advertising	39	International Law Enforcement and Cooperation
17	Agriculture and Farming	40	Climate Change Mitigation and Adaptation
18	Entrepreneurship	41	Gaming and interactive experiences*
19	Autonomous Robots and Robotics	42	Hobbies*
20	Innovation and Research	43	Smart home*
21	Management and Operation of critical infrastructure	44	Social and Community Services*
22	Law enforcement	45	Public and private transportation*
23	Migration, Asylum and Border control management	46	Interpersonal Communication*