

Space for Twin Cities: Urban Planning

Space for green & sustainable infrastructure

Beatrice Barresi

*Partner-led and thematic initiatives
Space Solutions
European Space Agency*

Business
Applications

Business
Incubation

Transfer
Technology

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ESA SPACE SOLUTIONS



→ MARITIME



→ SPACE WEATHER



→ HEALTHCARE



→ TRANSPORT



→ EARTH OBSERVATION



→ ENVIRONMENT



→ AGRICULTURE



→ SATELLITE NAVIGATION



→ MEDIA



→ ENERGY



→ SATELLITE COMMUNICATION



→ EDUCATION



→ HUMAN SPACEFLIGHT TECHNOLOGIES



→ AVIATION



→ FINANCIAL

INNOVATIVE TECHNOLOGIES

Space Weather



Earth Observation



Satellite Navigation



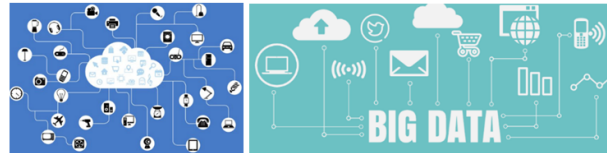
Satellite Communication



Human Spaceflight
Technologies



- UMS
- HAPS
- RPAS
- VR/AR
- 5G
- IoT
- Artificial Intelligence
- Megaconstellations
- Cybersecurity
- Blockchain



Maritime



Healthcare



Transport



Environment



Agriculture



Media



Energy



Education



Aviation



Financial



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Intelligent Transport System Equant

Service for road operators to maintain roads, monitor traffic and respond to incidents in order to maximise traffic efficiency and safety

Solution is based on a network of wireless IoT which detect vehicles passing in their vicinity.

This information is transmitted to a road-side gateway that then sends the information onwards, via satellite uplink, to a cloud server



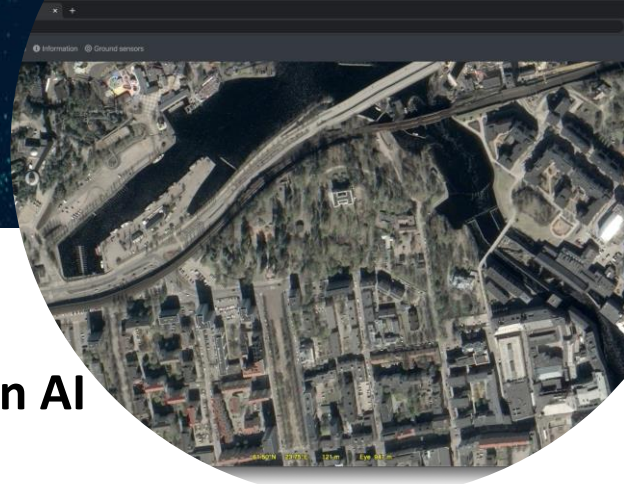


System Architecture





Urban Artificial Intelligence



City digital twin for Monitoring urban environment

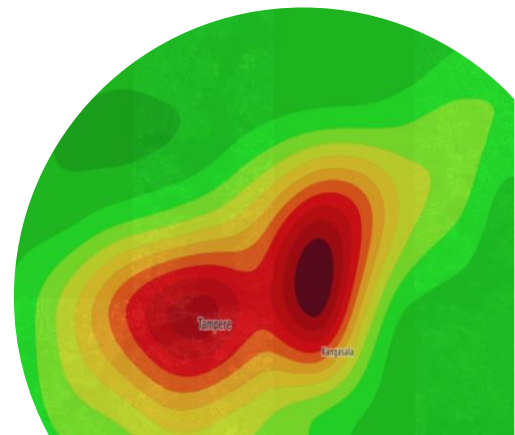
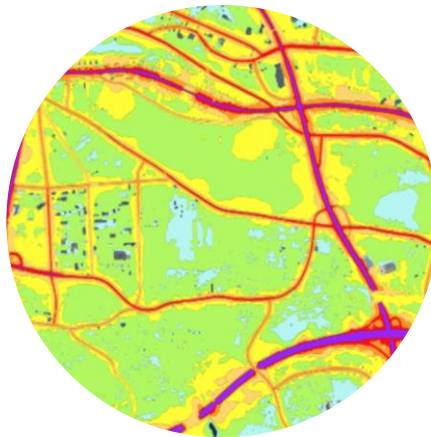
Analytics/recommendations for decision makers based on AI

Data layers:

- Satellite imagery
- Drones
- Urban areas
- Traffic
- IoT Sensors

Map interface:

- ✓ Urban Analytics
- ✓ City data aggregator
- ✓ Impact predictions



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Environmental impact of building construction



GREEN BUILDING

Data layers:

Environment

Humidity

Heat

Cold

Air Quality

Urban Green Areas

- ITT aimed at receiving proposals of feasibility studies to investigate **the technical feasibility and economic viability of space based applications for the planning and the management of green areas in cities.**
- The study is aligned with the **EU Green Deal** aiming to transform the EU's society and economy by focusing on the natural capital and connecting the EU policy vision of the role of forests in the Green Deal with the perspectives of environment protection administrations municipalities and all interested stakeholders.
- This study responds to the SDG n.11 which aims to make cities and human settlements inclusive, safe, resilient and sustainable and one of the target which is specified is explicitly about : provide universal access to safe, inclusive and accessible, green and public spaces.
- Targeted application areas include:
 - Urban green areas/parks planning
 - Urban green surveyors
 - Urban green areas maintenance
 - Monitoring & improving urban/suburban ecosystem
- The initiative is supported by WWF, Municipality authorities, FAO
- The Call is planed to be open in **Q2 2021**



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Funding opportunities - Currently open

→ SPACE FOR CYCLE POLLUTION
MONITORING AND REDUCTION



→ SPACE FOR URBAN AIR
MOBILITY



→ SPACE SYSTEMS FOR SAFETY
AND SECURITY (4S)
APPLICATIONS



→ DIGITAL HEALTH IN
DEVELOPING ECONOMIES



→ NEW EDUCATION



→ MARINE ENERGY



→ SPACE APPLICATIONS TO
ADVANCE INNOVATION ON
CIRCULAR CITIES



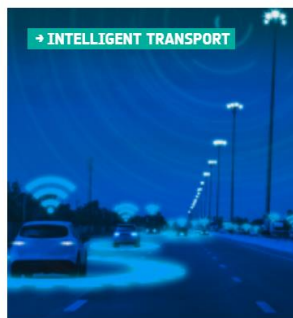
→ SPACE AND 5G CONVERGENCE:
TRANSPORT & LOGISTICS



→ CONNECTED RURAL
COMMUNITIES



→ INTELLIGENT TRANSPORT



→ PREVENT AND DETECT FOOD
AND BEVERAGE FRAUD



→ COMMODITIES



→ PROPTech



→ SPACE&RAIL



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→ **SPACE IS OPEN FOR BUSINESS**

Beatrice.Barresi@esa.int