



Infrastructure Panel Results Summary

User Consultation Platform 2022: Plenary Session

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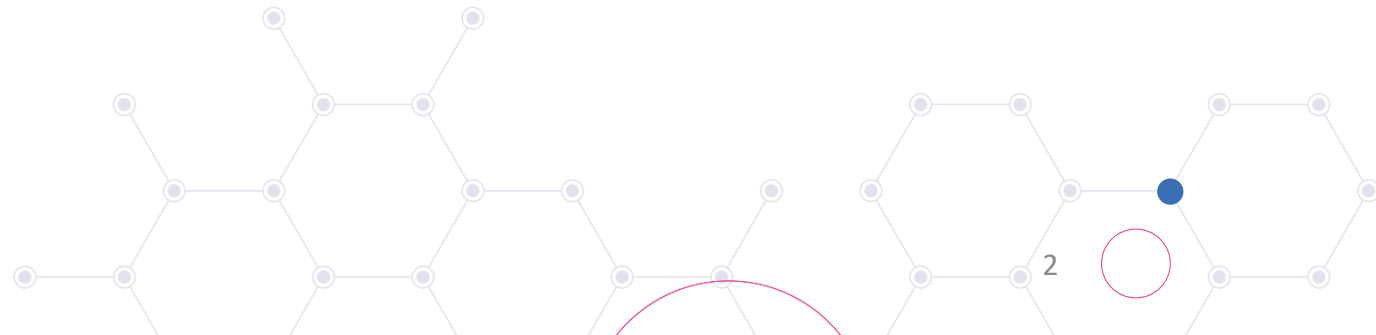
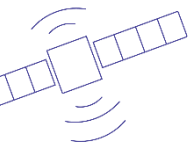
04 October, Prague



Agenda



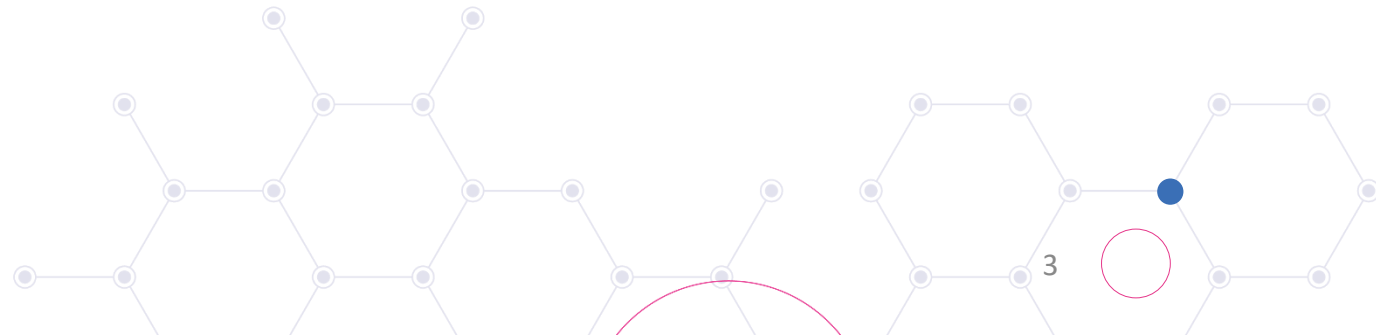
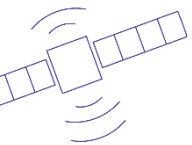
- Segment overview
- Priority applications in the segment, leveraging Space (synergies)
- New User Needs and Requirements (focusing on performance and data)
- Conclusions and next steps (including proposals for improvement of the services/data and R&D)





Infrastructure segment overview

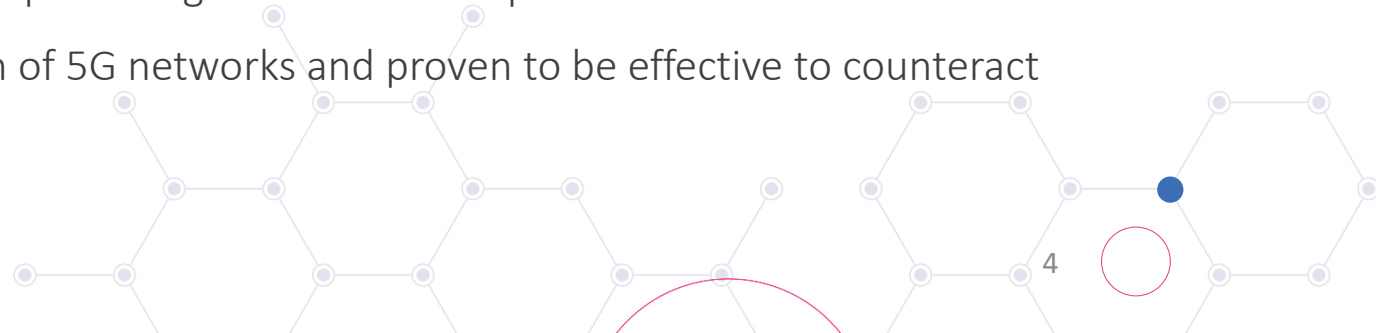
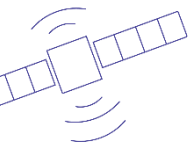
- "Infrastructure" addresses the basic systems and facilities that countries, states, regions, cities and organisations need to work effectively. It includes:
 - A wide range of man-made constructions such as buildings, civil engineering constructions, production and storage facilities
 - Telecommunication networks
- The segment does not address networks related to energy distribution and finance
- Both GNSS and Earth Observation are fully relevant but investigations have focused on Earth Observation



Priority applications in the segment, leveraging Space (synergies) 1/2



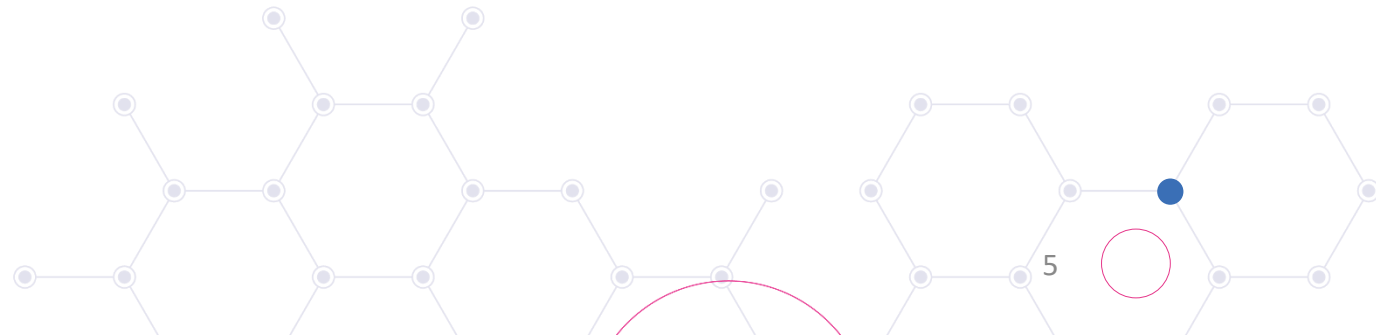
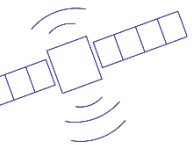
- Four priority applications discussed during the session (site selection and planning, monitoring of construction operations, post-construction monitoring and environmental impact assessment). Discussions have focused on **EO-related requirements**.
- For infrastructure in general:
 - Ground deformation monitoring and change detection are key elements for most applications
 - Availability of historical data is often required
- For 5G telecommunication networks:
 - Copernicus has relevance in "low to C-band" in rural areas where it offers the most optimal data resolution for network planning along roads (quality of planning vs cost and time efficiency)
 - "5G cross-border corridors" is one of the most promising use cases for Copernicus
 - Galileo OSNMA tested for the synchronisation of 5G networks and proven to be effective to counteract intentional radiofrequency attacks



Priority applications in the segment, leveraging Space (synergies) 2/2



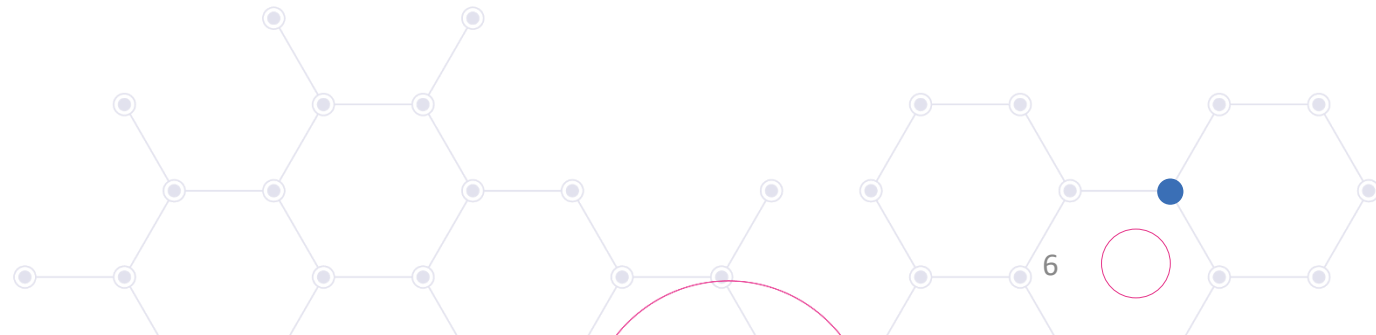
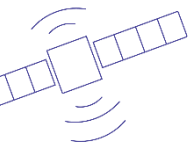
- Trends supporting new or improved infrastructure-related applications:
 - Multiplication of smallsat constellations offering affordable optical or SAR imagery with very high revisit rates
 - Increasing use of Artificial Intelligence and Machine Learning
 - Digitalisation of the infrastructure sector for construction and maintenance



New User Needs and Requirements (focusing on performance and data)



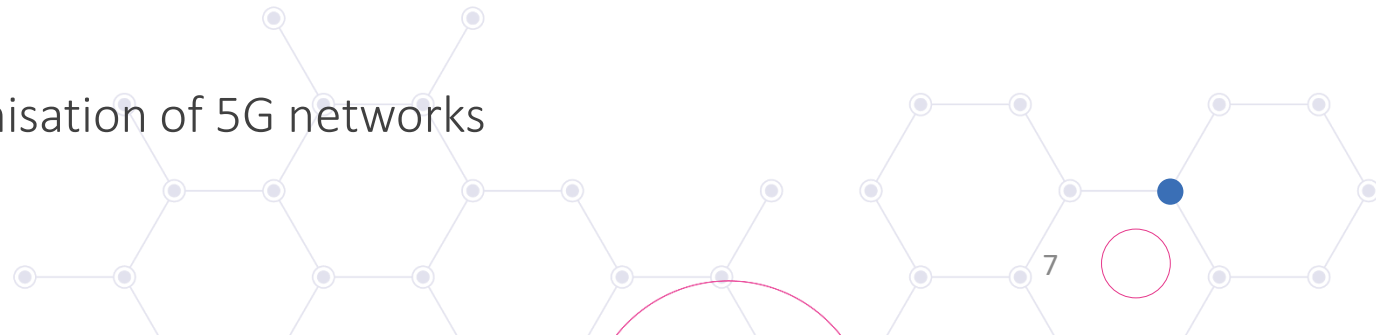
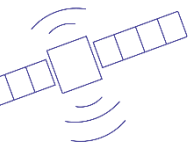
- User requirements presented during the session were validated from a general perspective but...
- Need to be customized/refined depending on specific use cases ...





Conclusions and next steps

- Proposal for improvement of the service / data
 - Ensure that the European Ground Motion Service (EGMS) "package" includes a quality API
 - Availability of X-Band SAR data under a FFO data policy
 - Promote European GIS data within EU Member States in particular for EU-funded projects
- Proposal for R&D
 - Use of Artificial Intelligence, Machine Learning and Deep Learning to upscale Sentinel imagery resolution
 - Cross-border/cross-operators synchronisation of 5G networks



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