UK SPACE AGENCY

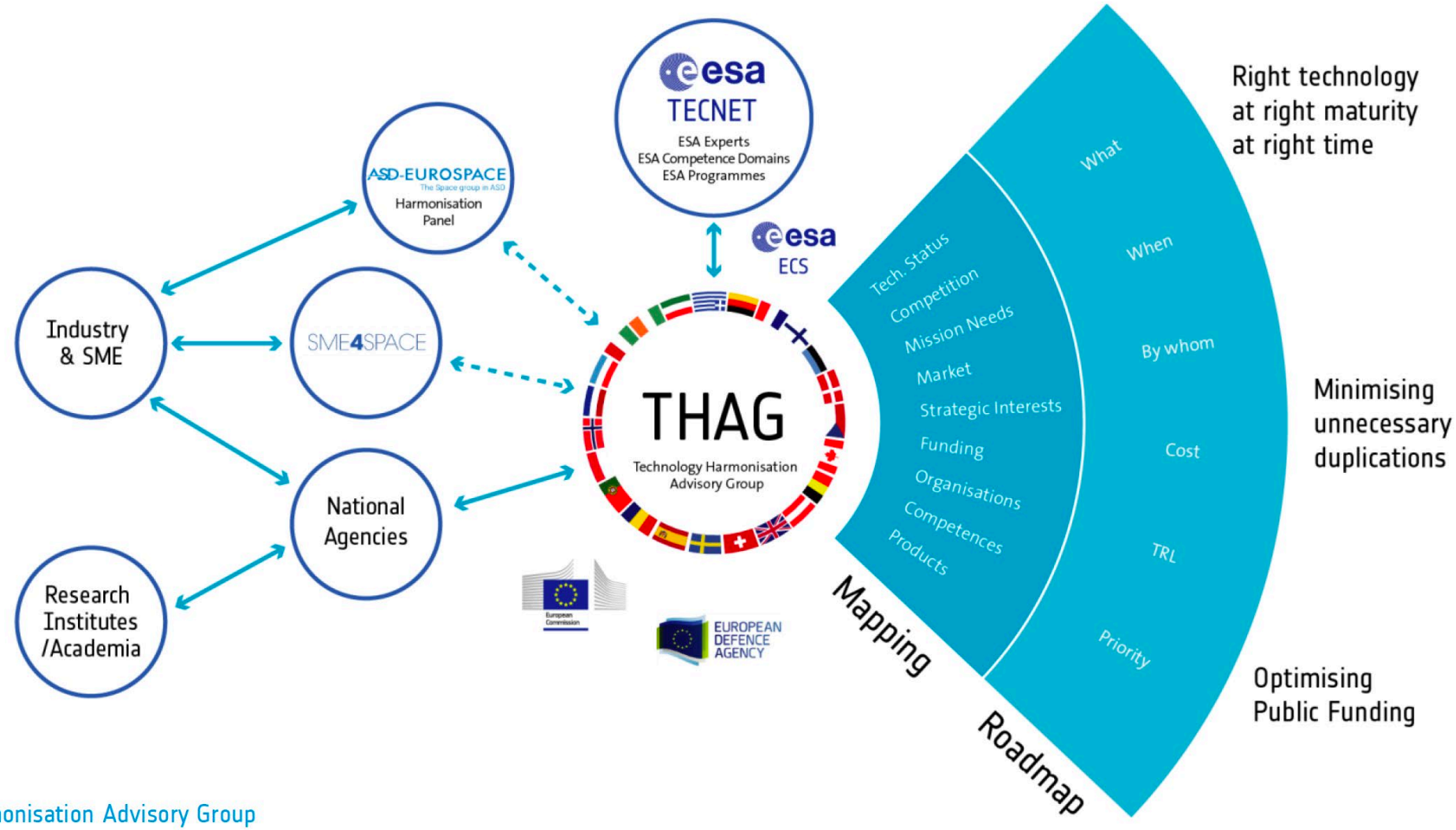
Technology Harmonisation: are you missing out?

Tony Mears

UK Space Agency

UK Space Conference 2019

HARMONISATION: AN INCLUSIVE PROCESS



THAG: Technology Harmonisation Advisory Group

HARMONISATION: LIST OF TOPICS

CD1
- ✓Optical Detectors, Visible Range
- ✓Optical Detectors, IR Range
- ✓Micro-Nano Technologies - MEMS
- ✓Photonics new

CD2
- ✓Electrical Motors
- ✓Deployable Booms & Inflatable Structures
- ✓Solar Array Drive Mechanisms
- ✓Electric Propulsion Pointing Mechanisms (EPPMs)
- ✓Position Sensors
- ✓Technologies for Hold Down, Release, Separation and Deployment Systems
- ✓Pyrotechnic Devices
- ✓Two-Phase Heat Transport Systems
- ✓Cryogenics and Focal Plane Cooling
- ✓Composite Materials
- ✓Additive Manufacturing
- ✓Coatings new

CD3
- ✓Avionics Embedded Systems
- ✓On-Board Payload Data Processing
- ✓Data Systems and On Board Computers
- ✓Microelectronics - ASIC & FPGA
- ✓On-Board Software
- ✓AOCS Sensors and Actuators (Part I & Part II)
- ✓On-Board Radio Navigation Receivers
- ✓RF & Optical Metrology
- ✓TT&C Transponders and Payload Data Transmitters

CD4
- ✓Solar Generators and Solar Cells
- ✓Electrochemical Energy Storage
- ✓Power Management and Distribution
- ✓Power RF Measurements & Modelling

CD5
- ✓Critical Active RF Technologies
- ✓Frequency and Time Generation and Distribution (Space & Ground)
- ✓Technologies for Passive Millimetre & Submillimetre Wave Instruments
- ✓Array Antennas
- ✓Reflector Antennas
- ✓RF Metamaterials and Metasurfaces
- ✓Microwave Passive Hardware
- ✓Technologies for Optical Passive Instruments (Stable & Lightweight Structures)
- ✓Technologies for Optical Passive Instruments (Mirrors)
- ✓Optical Communication for Space
- ✓Lidar Critical Subsystems
- ✓Ground Station Technology

CD6
- ✓Automation and Robotics
- ✓Life Support Technologies new

CD7
- ✓Fluid Mechanic and Aerothermodynamics Tools
- ✓Chemical Propulsion - Micropropulsion and Related Technologies
- ✓Chemical Propulsion - Components (including Tanks)
- ✓Electric Propulsion Technologies

CD8
- ✓Functional Verification and Missions Operations Systems

CD9
- ✓System Modelling and Simulation Tools
- ✓System Data Repository
- ✓Multibody Dynamic Simulation
- ✓Thermal & Space Environment S/W Tools and Interfaces
- ✓Big Data from Space

CD10
- ✓Radiation Environments & Effects
- ✓De-orbiting Technologies new

ESA Harmonisation Topics

1st Cycle | 2020

- AOCS Sensors and Actuators
- On-Board Software
- Functional Verification and Missions Operations Systems
- Micro-Nano Technologies – MEMS
- System Engineering Digital Infrastructure (former System Data Repository)

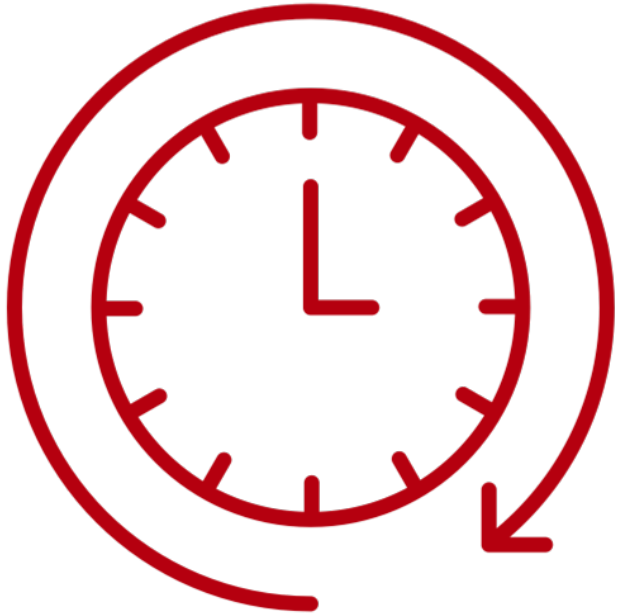
2nd Cycle | 2020

- Critical Active RF Technologies
- Pyrotechnic Devices
- Solar Array Drive Mechanism
- Electromagnetic Compatibility
- TT&C Transponder and Payload Data Transmission

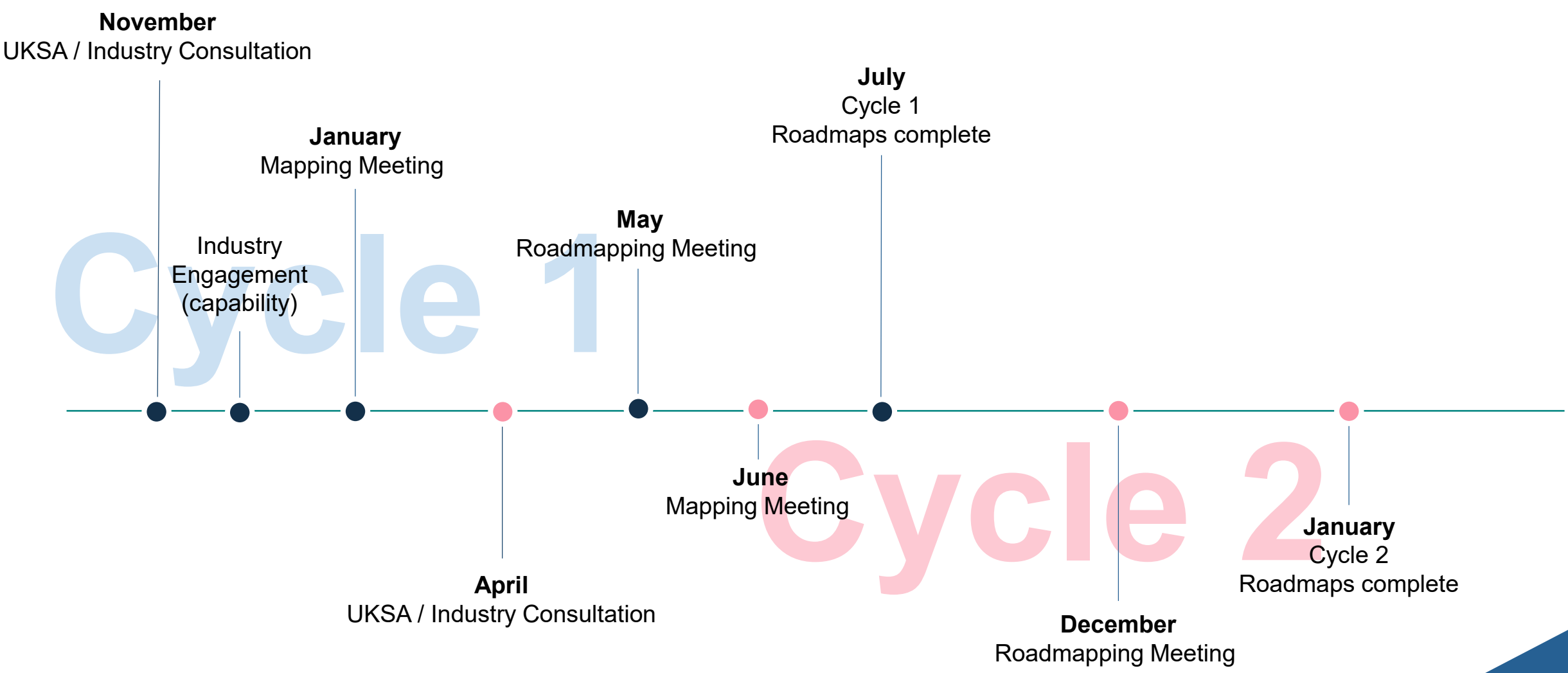
ESA Harmonisation 2021 Topics

(subject to change)

- AOCS Sensors and actuators (pt2) (2015)
- Electrical Motors (2015)
- Ground Station Technology (2015)
- Optical Detectors, Visible Range (2015)
- Power RF Measurements & Modelling (2015)
- Radiation Environments & Effects (2015)
- RF Metamaterials and Metasurfaces (2016)
- Solar Generators and Solar Cells (2015)
- Technologies for Hold Down, Release, Seperation and Deployment Systems (2015)



Harmonisation Cycles



How can you feed in / express interest?

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Thank you for listening
– *please get in touch*