

# Space & CBRNe Threats: EDA-ESA Cooperation

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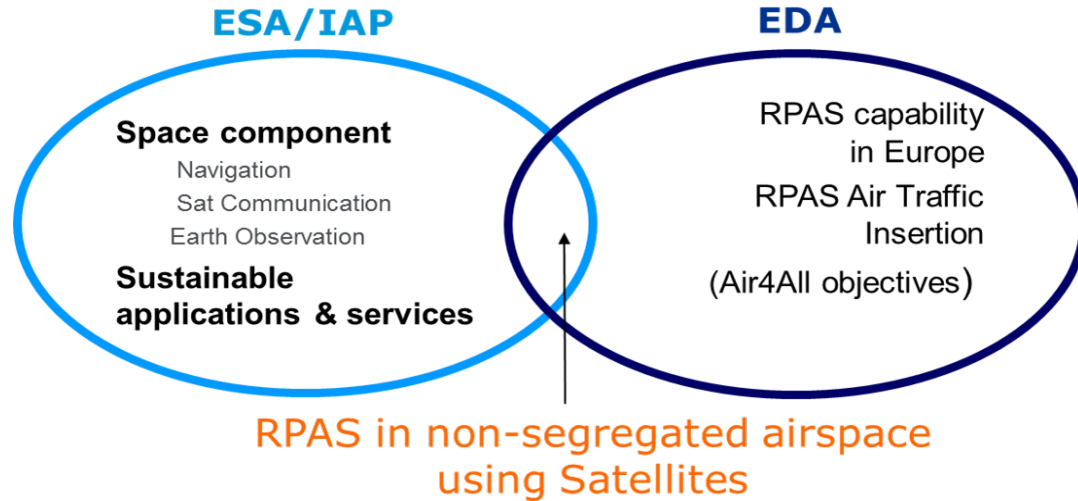
*European Space Agency*

*ESTEC, 07 March 2017*

# EDA-ESA cooperation: the RPAs model



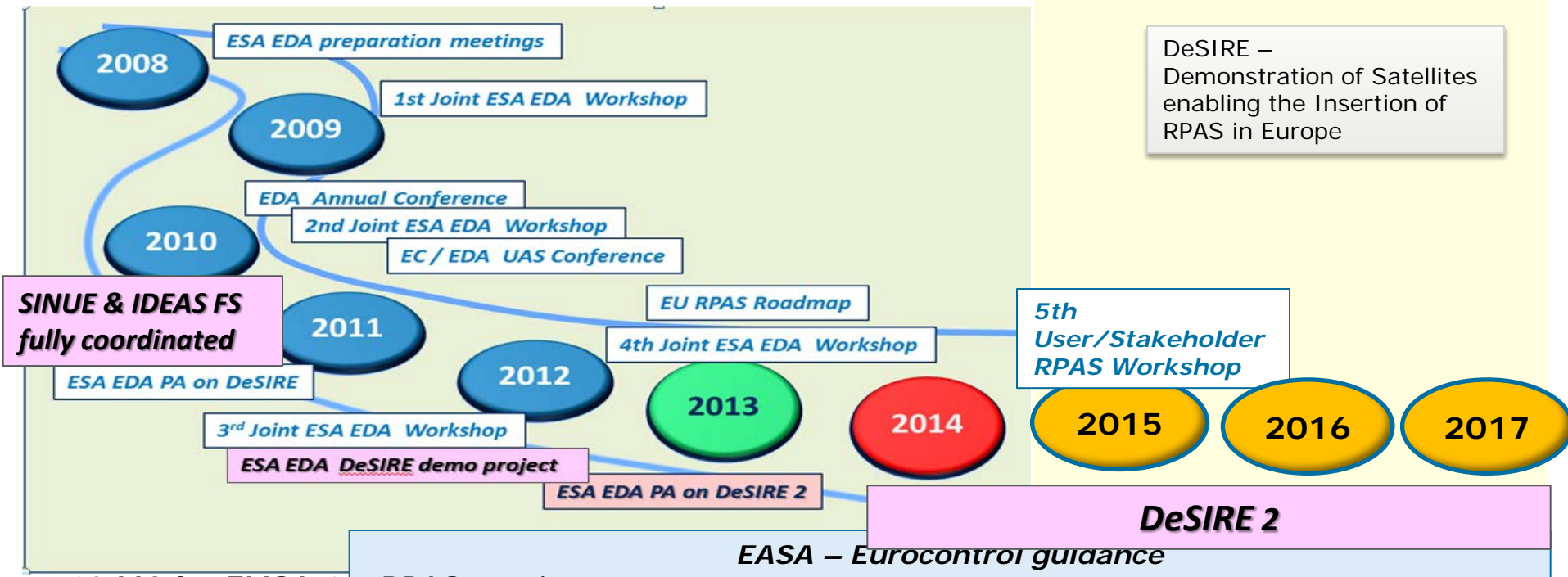
ESA and EDA collaboration on RPAS started in 2009 with the aim of supporting RPAS integration in the general airspace



EASA and Eurocontrol have joined this initiative supporting the DeSIRE and DeSIRE2 projects.



# The RPAs roadmap



- 10 M€ for EMSA 1st RPAS service

- The following EMSA RPAS Services (FRONTEX/EFCA) to Monitor fishery / Migration etc (2017 / ~60 M€)

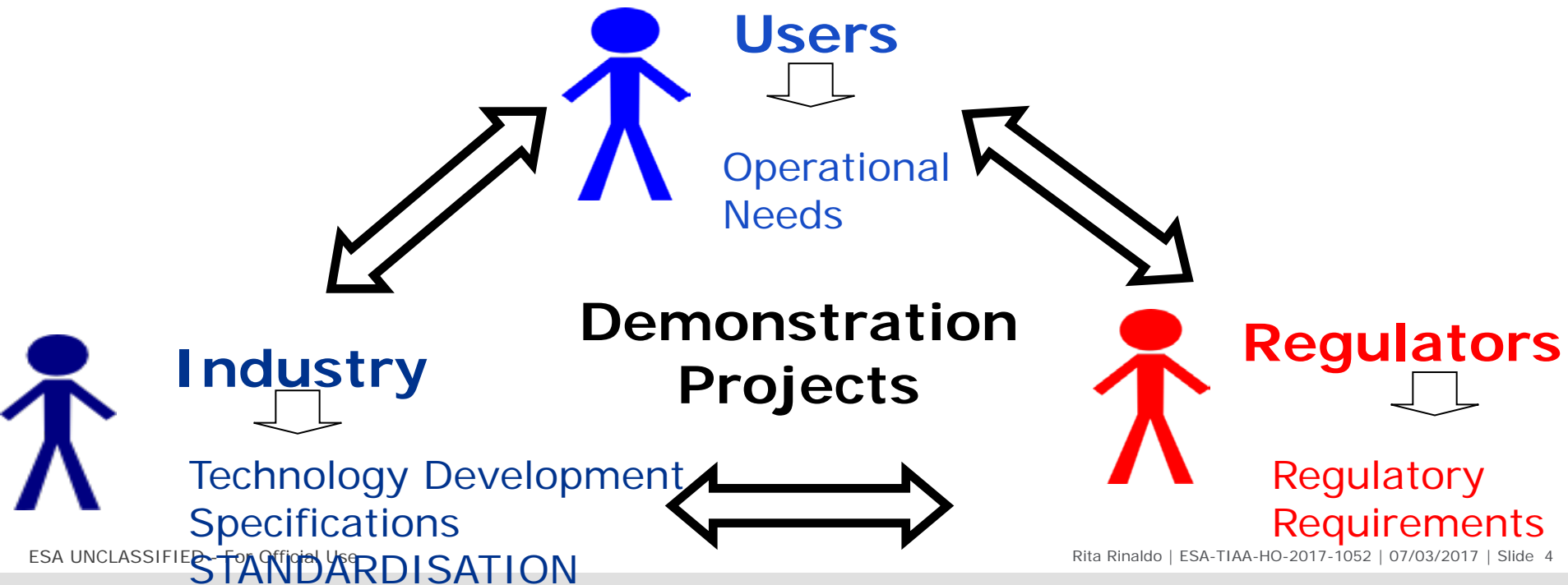
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# The approach

Provide convincing demonstrations involving all stakeholders



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- Increased focus on CBRNe due to the current (geo)political circumstances
- CBRNe threats are of global nature and call for development of global solutions
- Numerous user communities involved, including institutional and commercial actors
- Space can be crucial to advance capabilities in CBRNe response



# How space can help in the CBRNe case



Exploitation of space-based assets is crucial to advance present capabilities in addressing CBRNe threats:

- 1. Improve monitoring and detection capabilities and provision of early warning**
- 2. Improve forecasting capabilities and rapid environmental assessment**
- 3. Improve CBRN response**
- 4. and more...**



# The value of space for CBRNe risks



CBRN risk	SAT-EO	SAT-NAV	SAT-COM
Natural CBRN Hazards Disease, earthquakes, floods impacting CBRN material	Range of EO services can be provided (flood extent mapping, terrain models, ground movement, etc.)	Positioning for coordination of rescue operations, sensors for early warning, RPAS navigation	Live streaming of images, data transfer, voice communications
Accidents Industrial, laboratory accidents, other	Weather observations/forecast (plume monitoring, ocean currents, etc.)	Positioning for coordination of rescue operations, RPAS navigation	Live streaming of images, data transfer, voice communications
Criminal CBRN Hazards Terrorism, sabotage, illicit CBRN trafficking	Dispersion forecasts and effect assessment	Tracking & tracing , RPAs Navigation	Live streaming of images, data transfer, voice communications

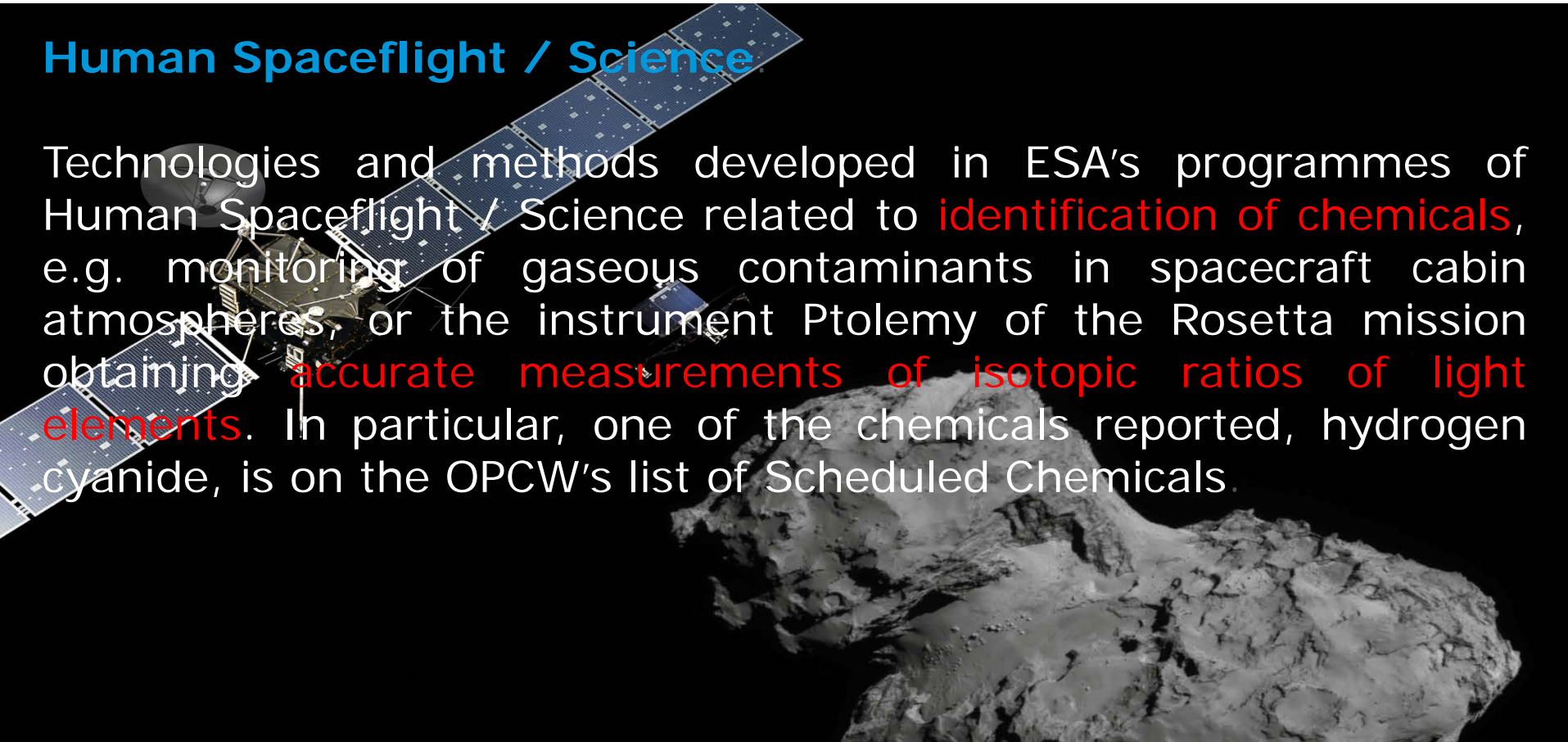


Not only SatEO, SatCOM and SatNAV  
also...



## Human Spaceflight / Science

Technologies and methods developed in ESA's programmes of Human Spaceflight / Science related to **identification of chemicals**, e.g. monitoring of gaseous contaminants in spacecraft cabin atmospheres, or the instrument Ptolemy of the Rosetta mission obtaining **accurate measurements of isotopic ratios of light elements**. In particular, one of the chemicals reported, hydrogen cyanide, is on the OPCW's list of Scheduled Chemicals.





# EDA-ESA collaboration on CBRN: why?



**EDA** has competence on **CBRNe technology and R&D**

**ESA** has competence on the **space elements** and on developing **sustainable services**

The partnership between EDA and ESA on CBRNe leverages on the Agencies' specific competences for **bringing to exploitation services based on integrated space and terrestrial technologies in the CBRN context**



# EDA-ESA collaboration on CBRNe: how?



- EDA and ESA will undertake a **joint Feasibility Study** to address specifically the needs of the different user communities (civil protection and first responders, private actors, MoDs)
- Study objective: assess the feasibility of a service for providing fast and accurate response to CBRN threats, catering for detection and situational awareness, prediction, early warning and response planning
- The study (ies) could be followed by demonstration projects pending demonstration of the technical and business viability



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*“Space is the Limit”*

*Thank You!*