

# ESA Secure SatCom and Govsatcom

EISC Workshop 2016, Space and Security

18 April 2016, Sinaia, Romania



- ESA has been involved in a growing number of security-related activities and programmes.
- The Agency has continued working on the security dimension of Galileo and Copernicus, has pursued other successful security-related activities and started new ones – Secure SatCom.
- The Agency has also further reinforced its cooperation with the relevant EU institutions, mainly the European Commission (EC) and the European Defence Agency (EDA).

# Secure SatCom activities coordinated activities between ESA and EDA



- **Remotely Piloted Aircraft Systems:** ESA project (DeSIRE) supporting the development of services provided by RPAS complemented by satellites and flying in non-segregated airspace.
- **Tactical and Mobile Satellite Communications:** ESA Study to identify capability gaps in current narrowband tactical satellite communications systems and solutions
- **Security missions in the Arctic:** EDA has recently concluded a study on security missions in the Arctic, associated operational scenarios, existing capabilities and applications with identification of capability gaps in communication
- **Persistent Surveillance:** ESA and EDA cooperation on persistent surveillance to characterize operational scenarios, intelligence requirements, performances and to describe capabilities, technology roadmaps.
- **Cybersecurity Training Range:** Identify facilities within the set of cyber security facilities which will be pooled by EDA Member States.

- December 2013 European Council and the EU Heads of State and Government discussed the Common Security and Defence Policy (CSDP) and identified priority actions for stronger cooperation.
- Developing the next generation of governmental SATCOM capabilities at European level in close cooperation with EU countries, EDA, and ESA.
- In November 2014, the Commission launched study on the “Identification of the requirements for Satellite Communication to support EU Security Policies and Infrastructures”. This report serves as a basis for further work to better define civilian user requirements complementing
- ESA, in charge to support European SATCOM Industry in their technology roadmaps can prepare technological and service capabilities.

# Secure SatCom and GovSatCom (2/2)



- Dec 2014, the EU Competitiveness Council underlined the need to avoid fragmentation of demand and to foster civil-military synergies for the preparation of the next generation of governmental satellite communication, through close cooperation among Member States, EDA, the EC and ESA
- Recently the EC - as one of its priorities - included GOVSATCOM in its European Defence Action Plan 2016 as a possible future concrete initiative



Crisis management



Infrastructure Monitoring



Border surveillance



Security Solutions Independence

# GOVSATCOM Industrial Opportunity



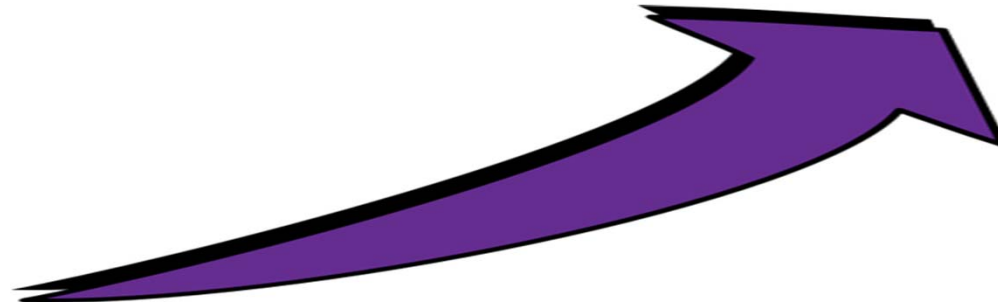
GOVSATCOM will potentially mobilise substantial institutional budget to implement a SATCOM infrastructure and provide associated services

 **A Highly attractive opportunity for SATCOM industry** 

ESA's role focused on enabling the emergence of Secure SATCOM market segments and positioning ESA MS Space industry for this market

- ✓ Ensure ESA MS industry are taking the initial steps to be able to respond to the GOVSATCOM requirements (technology and services) from EC/EDA and potential other secure Satcom worldwide demand
- ✓ Proof of concept to the GOVSATCOM stakeholders via Precursor
- ✓ Demonstrate a model of cooperation with the Commission and EDA in establishing and implementing partnerships in the institutional domain in particular in a future GOVSATCOM operational programme

# GOVSATCOM Incremental Approach



# 1

**2015-2016**

**Preparatory Studies**

(ESA/EDA/EC)

EC/EDA: User requirements

ESA: Assessment of potential

- system architecture, technology
- Implementation scenarios
- existing/planned Satcom systems

as possible future elements of GOVSATCOM ESA precursor

Harald Hauschildt | ESA-DTIA-HO-2016-00XX | 18/04/2016 | Slide 7

ESA UNCLASSIFIED - For Internal Use

C-MIN 16

# 2

**2017-2019**

**GOVSATCOM  
ESA Precursor**

In parallel:  
EDA Initial Operating Capability 2018-

# 3

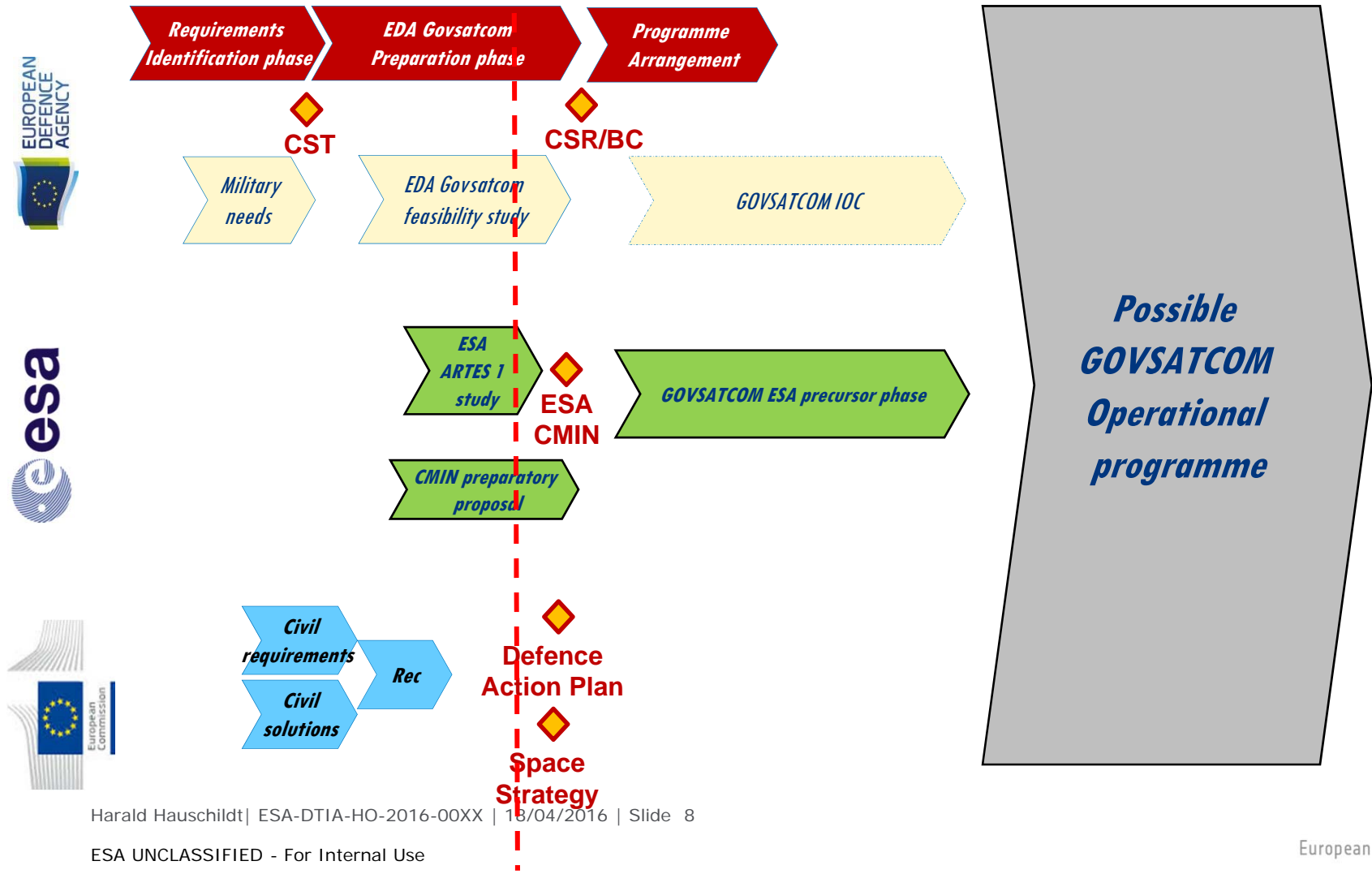
**2020/2021 ...**

**European Commission  
GOVSATCOM  
implementation**

# ESA GOVSATCOM Precursor EDA/ESA/EC Overall High-Level Schedule



2013    2014    2015    2016    2017    2018    2019    2020    2021    2022    2023





# GOVSATCOM ESA GOVSATCOM Precursor (Step 2)



## 2017-2019 GOVSATCOM ESA pre-cursor activities

- ✓ early R&D, IOV and demonstrators, in support of the specification and operational concepts validation in preparation of the GOVSATCOM system
- ✓ early support to European industry to develop technology as well as applications solutions
- ✓ demonstration of pre-cursor services relating to the development of future GOVSATCOM services, which may be provided under commercial service level agreements.



# ESA GOVSATCOM - Precursor High Level User Needs & Technologies



## High Level User Needs:

- Crisis management
- Border Surveillance
- Infrastructure monitoring
- Emerging domains (e.g. RPAS; data relay; arctic)
- European non-dependence (technologies, facilities, operations)

## Technologies including:

- Cyber-security
- Anti-jamming, Interference
- Optical Communication Technology
- Emerging constellations, low latency, polar
- Secure TT&C, access control and protection of planning data
- In-flight configurable On Board Processors & flexible capacity management solutions
- Ground segment solutions for secure pooling and sharing, user terminals
- European Certification

# ESA GOVSATCOM Precursor Workshop Outcome



Very high level of participation, >80 participants from industry

- 13 industrial consortia
- 10 ESA member states
- EDA confirmed plan to submit program proposal to MS end16/early17 including plans for IOC (2017+)
- EC confirmed next steps for further programme preparations, e.g. definition of policy options, stakeholder consultation, impact assessment
- ESA Precursor (2017-2020/21) considered timely

## Next Steps:

- Consolidate the industrial proposal to prepare ESA Programme Proposal
- Coordinate ESA CMIN16 preparations & Precursor with ESA Member States and EDA/EC schedule.



GOVSATCOM - ESA AND SPACE INDUSTRY SUPPORTING A EUROPEAN SOLUTION



At an event held on 5 April at ESA Headquarters in Paris, more than eighty high-level representatives from the European space industry and government discussed project proposals for the ESA Govsatcom Precursor initiative, an ambitious undertaking to provide the European public sector with guaranteed access to secure satellite communications. It addresses governmental requirements in the areas of civil protection, border surveillance, humanitarian and peacekeeping missions, and other security applications.

In December 2014, the EU Competitiveness Council had underlined the need to avoid fragmentation of demand and to foster civil-military synergies for the preparation of the next generation of governmental satellite communication, through close cooperation among Member States, the European Defence Agency (EDA), the European Commission, and ESA. More recently the European Commission – as one of its priorities – performed a study identifying high-level civil user requirements for

# ESA GOVSATCOM Precursor Workshop on ESA WebPortal



<https://artes.esa.int/news/govsatcom-esa-and-space-industry-supporting-european-solution>

*Magali Vaissiere, Director of ESA's Telecommunications and Integrated Applications directorate:*

"We want to provide the **European satellite industry with an opportunity to develop a new market of security solutions and services** and help **respond to the security challenges Europe and its citizens are increasingly being faced with**. We welcome the strong response from our industrial partners to join us in our efforts. **Together with EDA and the European Commission we have the ambition to successfully demonstrate a Europe taking timely action**".

# Contact Information



***Dr. Harald Hauschildt***

*Head of GovSatCom and Secure Communication Section (TIA-TIS)  
ESA - European Space Agency*

*EMail : Harald.Hauschildt@esa.int*

*Tel: +31 71 565 8257*

*European Space Agency  
ESTEC - Keplerlaan 1  
2200 AG Noordwijk, ZH  
The Netherlands*