

Communication Satellites for Defence and Security Challenges and opportunities Betzdorf 25 November 2015

SATCOM for civilian security purposes

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DG for Internal Market, Industry,
Entrepreneurship and SMEs
Policy and Space Research
European Commission



SATCOM for Security: the civilian Users

User communities

- Border Surveillance
- Maritime Security
- Police missions
- Civil Protection
- · Humanitarian Aid
- Transport Facilities
- EU Civil CSDP Missions and Operations

Emerging Trends

- Drones
 - · RPAS,
 - Other Drones
- Artic communications

Infrastructures using critical SATCOMs

- Transport Infrastructures
 - including Single European Sky ATM dimension, Global flight tracking, ERTMS
- Integrated Information Infrastructure
 - The European Border Surveillance System (EUROSUR)
 - The Common Information Sharing Environment (CISE) for integrated maritime surveillance
- Space Infrastructures including EGNOS GALILEO and COPERNICUS
- EU Institutional Communications



Study: Identification of the requirements for Satellite Communication to support EU Security Policies and Infrastructures:

Phase 1: Civil User SATCOM Requirements

Phase 2: Landscaping exercise (solutions)

Phase 3: Scenario and technology roadmap



Overall approach

Documentation review



SATCOM Security Users Workshop



Interviews & Workshops with users



Definition of a
set of 31
main
missions
covering the
activities
performed by
UC & INFRA

Mission n°1

UC 1

UC 2

Mission n°2

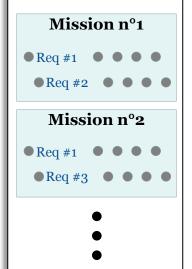
UC 2

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Mission n°31

UC 5 INFRA 1

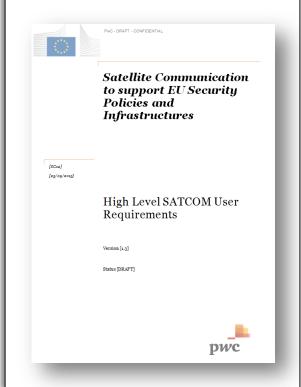
Collection of current and future high level SATCOM user requirements for each main missions



Mission n°31



Consolidation of high level SATCOM user requirements from all main missions of each UC & INFRA: 'High Level SATCOM User Requirements' document





Overall approach

(2/2) pwc ECORYS

Main missions



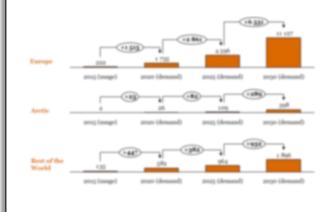
Mission n°31

UC 5 INFRA 1

'High Level SATCOM User Requirements'



Quantitative Analysis



Risk Analysis of current / planned SATCOM systems

	Criticality												
Border Surveillan co	Maritime communit y	Police missions	Civil Protection	Human. Aid	EU External Action	ATM	Rail	Road	Copernicus	GNSS programm es	RPAS	Aretie	EU In stit. Com m s
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Scenarios & list of critical technologies



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Optional collection and continue the continue to make the part of the SE of the continue to remain presents of the SE of the S		Low cost deployment mechanisms						
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som untel å gendelm at bredde sleder lysining den 1902-levil; formally TSV halls find, klader den neite 1904, 1902 190 190 formally TSV halls find, klader den neite 1904, 1902 190 190 formally TSV halls find, klader den neite 1904, 1902 1900 1900 formally TSV halls find, klader den neite 1904, 1902 1900 1900 formally TSV halls find, find the f	Optic	Microware photonics components for future high capacity microwave photonic reconfigurable payloods (hose, receiver, amplifier, MOEMS matrix, fiber, commerce and pussive components, etc.)						
Security VI fish (in the light data arise) 1904; 1007 NV C Proposey hand Illing print from (e.g. 5-band) Vide-band YCR		Centralized January Management (with access to Anti-January capabilities of both Space and Ground segments)						
Security Frequency hand Illing protection (e.g. 5-band) Wide-band TCR		Access control & protection and, metadata related to planning data (MCC level)						
Propercy hand filling protection (e.g. S-kand) Wide-hand TCR.		Secured TM-TC links (incl. higher data rate): FPGA / DSP TM-TC						
	Security	Frequency band filling protection (e.g. S-band)						
Software Define Radio (SDR)		Wide-band TCR.						
		Software Define Radio (SDR)						



Main findings

- Growing security user needs
- Specific security/defence risks
- Uncertain evolution of the SATCOM supply



Way forward

- Pool SATCOM demand
- Make best use of existing COMMERCIAL and GOVSATCOM systems
- Prepare the next generation GOVSATCOM together



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