SDR Tactical Communications: Operational Requirements Evolution

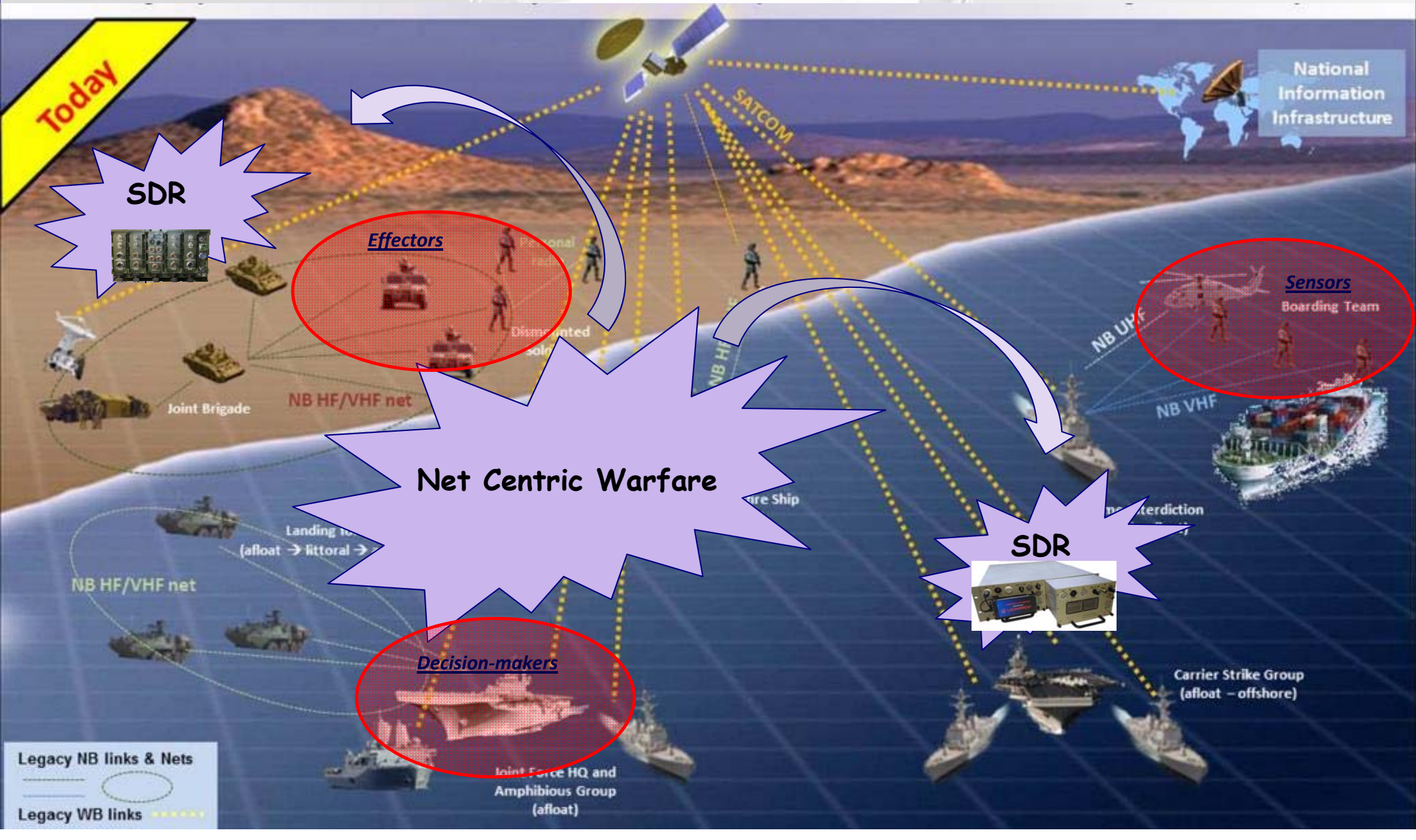
CDR Fabio AMADIO
C5ISTAR Programs Office

Berlin, 16 May 2019

The scope of this brief presentation is mainly to show how observation and continued analysis of the operational theatres impact on definition of the military requirements… that means:

Starting from the new operational scenarios, identify requirements in the Tactical Communications domain… and their evolution

Current Operational Scenario



Tactical Radio Evolution

Radio single function – single WF

Legacy

	Dismounted		Vehicular			G-A-G	SATCOM	
Type								
Band	UHF	VHF	VHF	UHF	HF	UHF	UHF	X - Ku
X			SINCGARS 635/V	HCDR	CNR 2000	SRT-651	AN/PRC -148 AN/PRC-152	TSM 305
II /								
I					RH4/RH5			TST- 211B
...			SINCGARS 634/V					
..	PRR IPR	SINCGARS 633/P						

Tactical Radio Evolution

Radio multi function – multi WF

SDR

	Dismounted		Vehicular			G-A-G	SATCOM	
Tipo								
Band	UHF	VHF	VHF	UHF	HF	UHF	UHF	X - Ku

X

II /

I

...

..

MANPACK

2 CH

DISMOUNTED SOLDIER

VEHICULAR
4 CH

SWave™ Naval

SWave™ Avionic

National SDR Program

2012

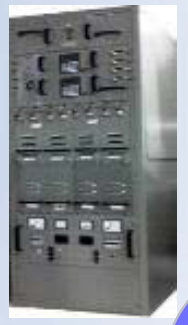
2013

2014

2016

2018

2020



SOLDIER

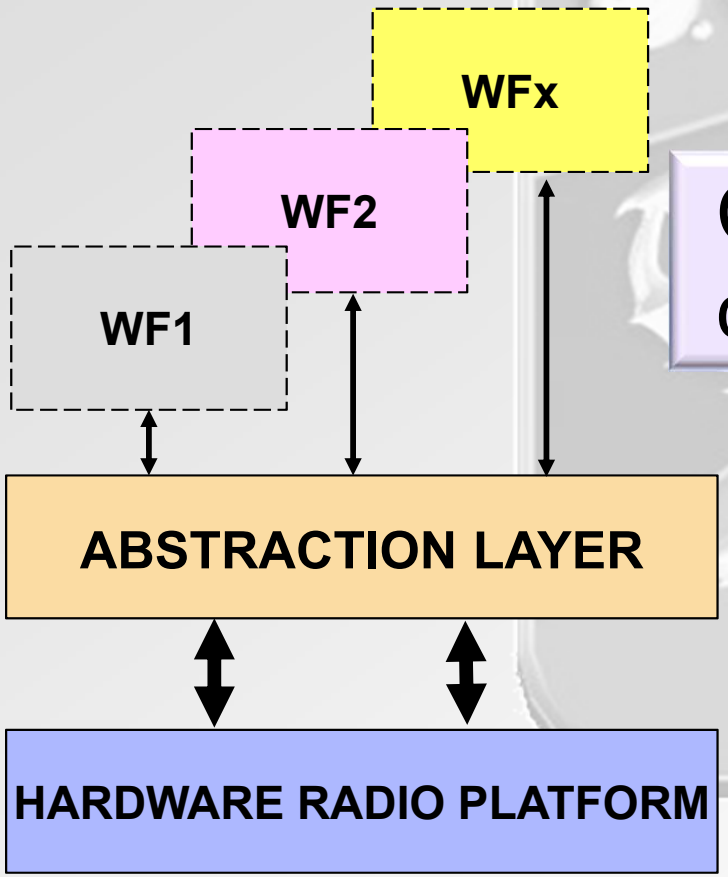
PLATFORMS

NAVY

AIR

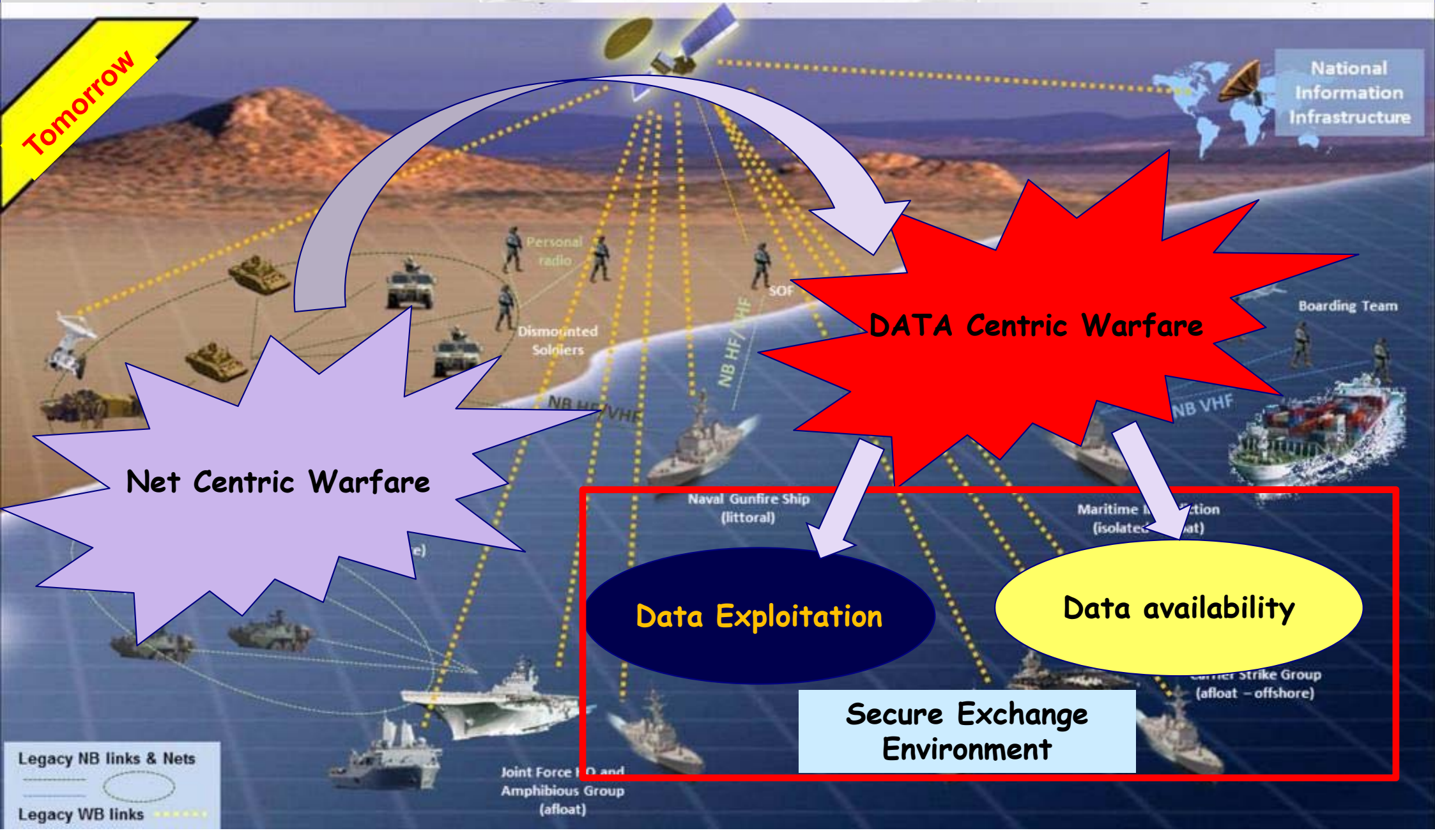
Tactical Radio Evolution

Software Defined Radio are radio frequency systems, multistandard, re-programmable by software…



Communication paradigm completely changed

New Operational Scenario



Tactical Radios Evolution and Governance

National WFs

EU WFs

SDR

NATO WFs
(STANAGs)

Coalition WFs

- **Effective governance to coordinate various SDR programs**
- **Continuous HW and SW upgrade**

INTEROPERABILITY

Wave Forms Evolution

- ESSOR HDR
- NARROW BAND
- 3D
- SATCOM
- NEW LINK 16

International SDR Cooperation

European Union

New WFs will be part of EU ESSOR PErmanent Structured COperation (PESCO) Program

ITA is co-leader with France of ESSOR PESCO Project

Co-share funding of this project will be pursued in the EDIDP/EDF projects

International SDR Cooperation

Certification and Standardization

EUROPEAN DEFENCE AGENCY

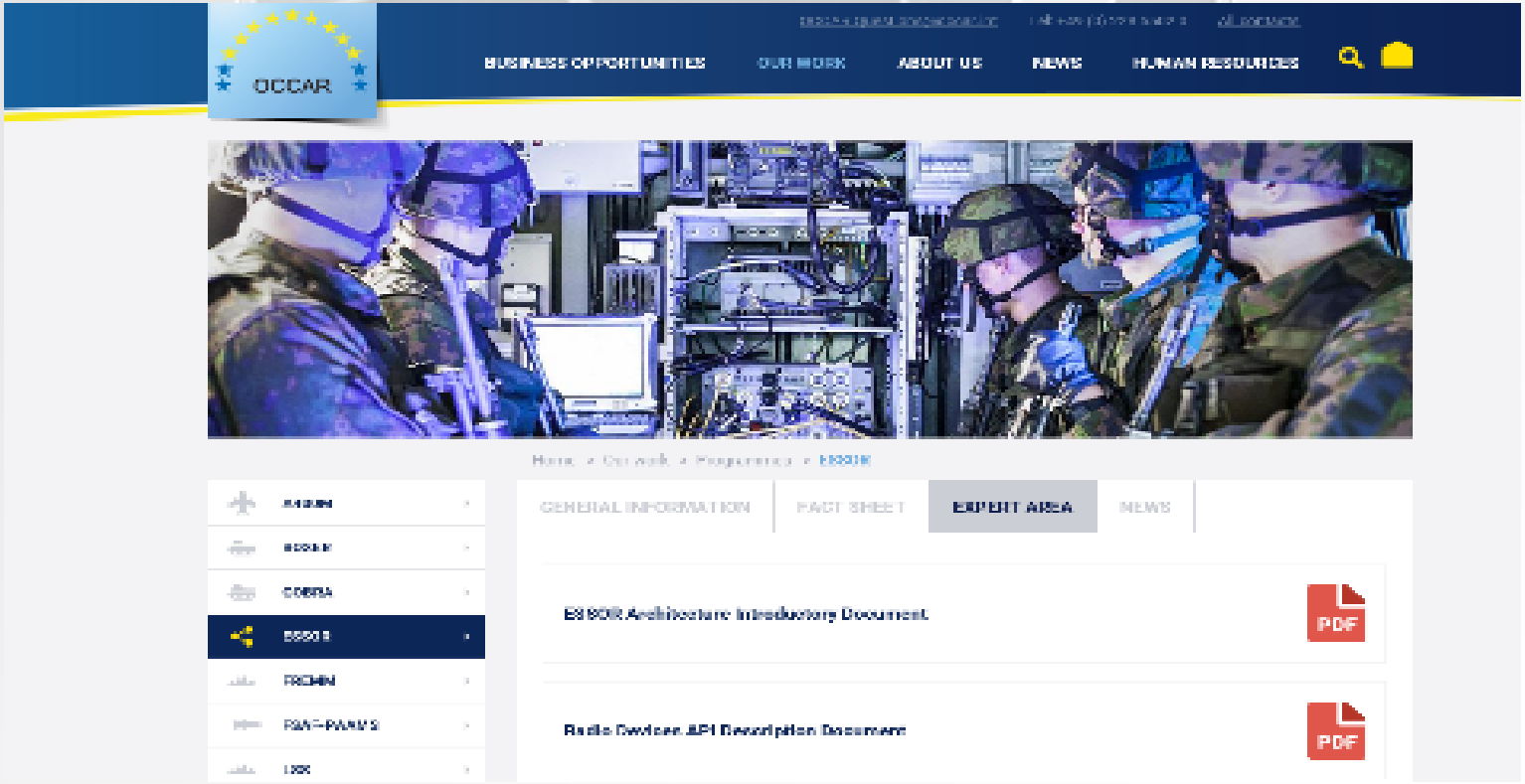
WIRELESS INNOVATION FORUM™

- **Assure interoperability**
- **Improve WFs portability**
- **Safeguard SDR investment**

Public release of ESSOR Architecture

The ESSOR Participating States decided to publish the ESSOR Architecture to allow the global SDR community to benefit from the expertise achieved in ten years of development, and to use it as a building block of future interoperable SDR applications

ESSOR architecture documents available on the OCCAR Website:
http://www.occar.int/programmes/essor



Thanks for your attention