



SDR Tactical Communications: Operational Requirements Evolution

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C5ISTAR Programs Office

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Secretariat General of Defence and National Armaments Directorate



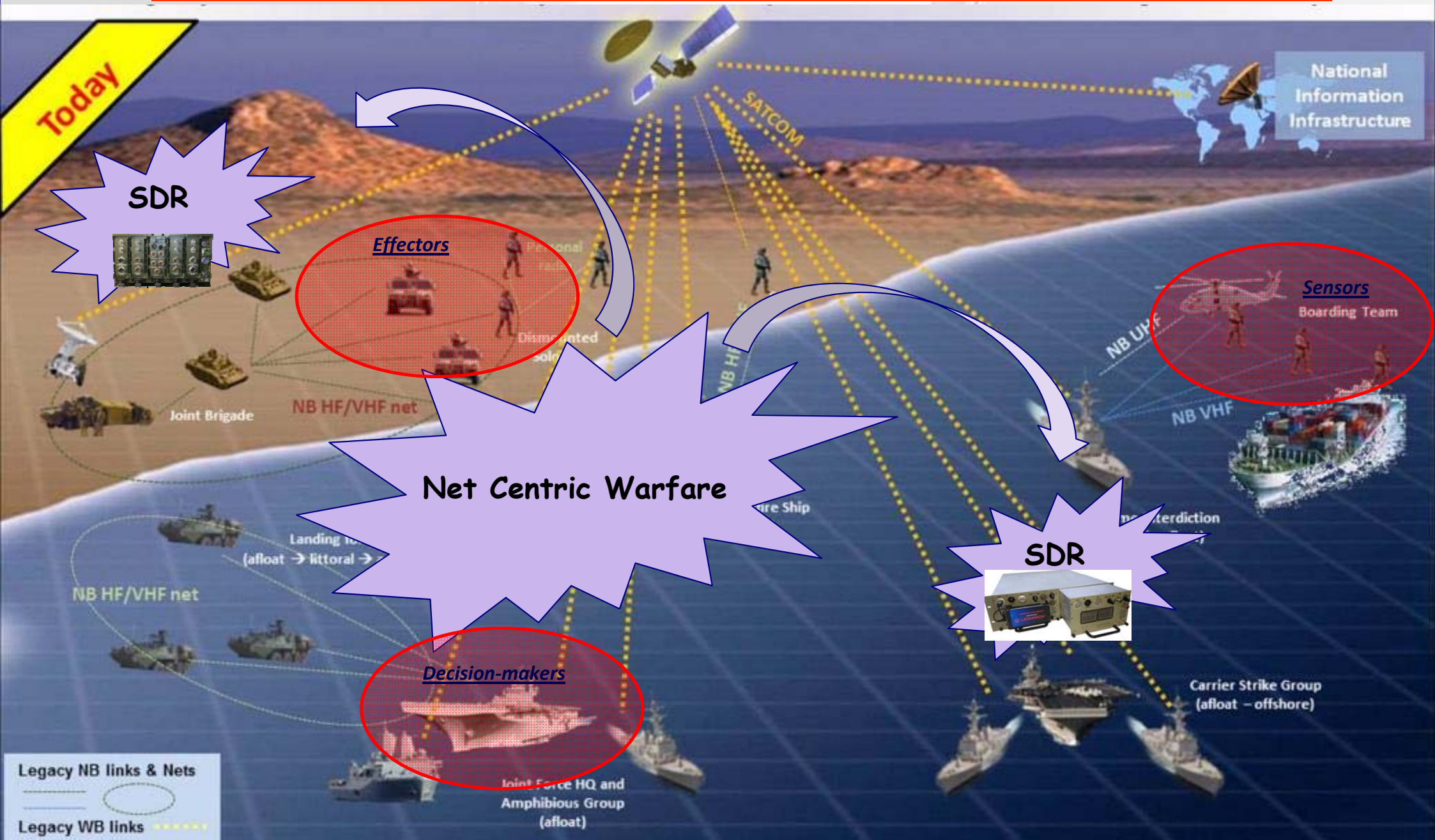
The scope of this brief presentation is mainly to show how observation and continued analysis of the operational theatres impact on definition of the military requirements... that means:

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





Current Operational Scenario



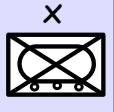
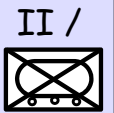
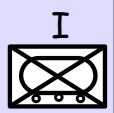















Tactical Radio Evolution



Radio single function – single WF

Legacy

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















Tactical Radio Evolution



Radio multi function – multi WF

SDR

     	 <p>VEHICULAR 4 CH</p>											
	 <p>MANPACK 2 CH</p>				 <p>SWave™ Naval</p>				 <p>SWave™ Avionic</p>			
	 <p>DISMOUNTED SOLDIER</p>											
	Tipo		Dismounted		Vehicular			G-A-G		SATCOM		
	Band		UHF	VHF	VHF	UHF	HF	UHF	UHF	UHF	X - Ku	



National SDR Program



2012

SOLDIER



2013



2014



PLATFORMS



2016



2018



NAVY



2020



AIR

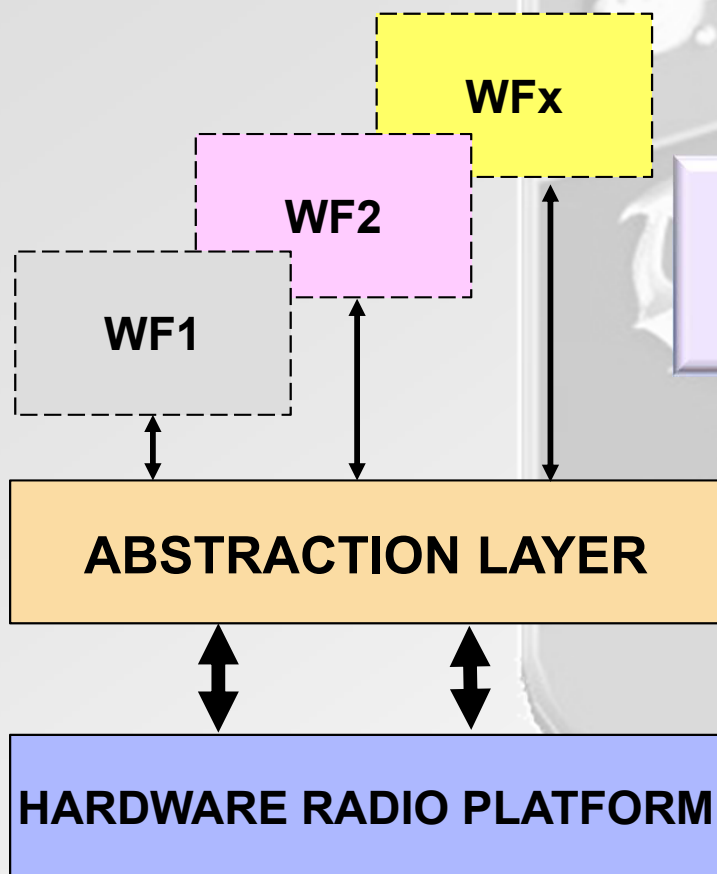




Tactical Radio Evolution



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

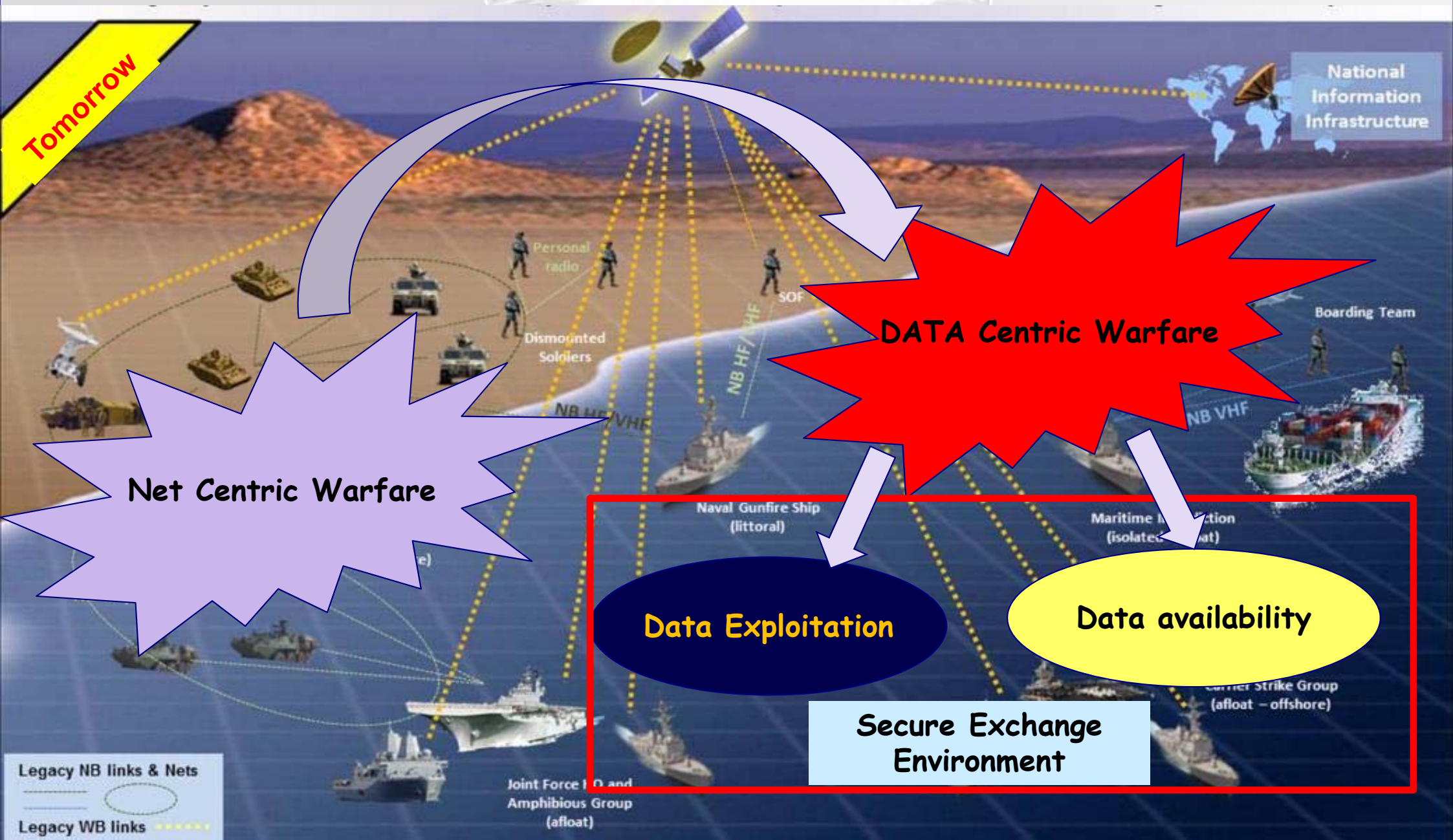


Communication paradigm completely changed



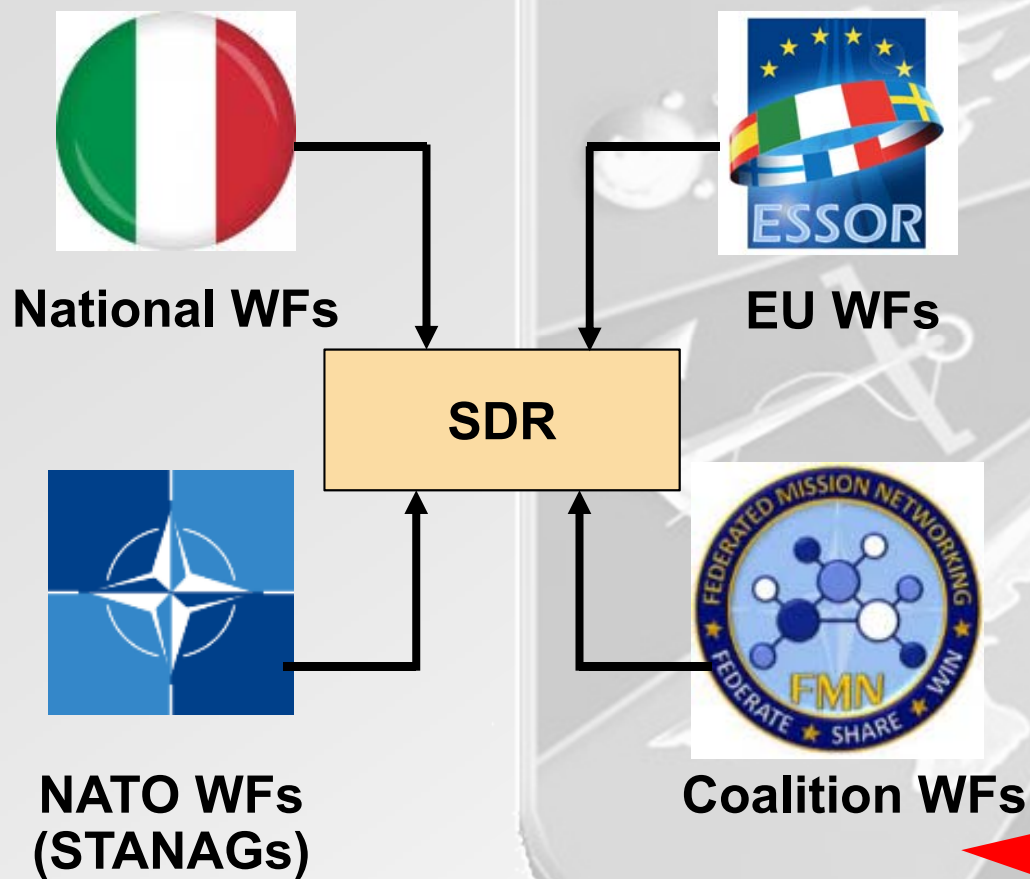


New Operational Scenario





Tactical Radios Evolution and Governance



- **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 COoperation
(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



- **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>

The screenshot displays the OCCAR website interface. At the top, there is a navigation bar with the OCCAR logo and menu items: BUSINESS OPPORTUNITIES, OUR WORK, ABOUT US, NEWS, and HUMAN RESOURCES. Below the navigation bar is a large image showing military personnel in a control room. The main content area features a sidebar with a menu including: HOME, ABOUT OCCAR, CONTACT, ESSOR, PROGRAMS, PARTNERS, and LEGAL. The main content area has tabs for GENERAL INFORMATION, FACT SHEET, EXPERT AREA, and NEWS. Under the EXPERT AREA tab, two documents are listed for download:

- ESSOR Architecture Introductory Document (PDF icon)
- Builds Downward API Description Document (PDF icon)



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Thanks for your attention

