



Liberté • Égalité • Fraternité

RÉPUBLIQUE FRANÇAISE

MINISTÈRE DE LA DÉFENSE



CONTACT

Digital Tactical and Theatre Communications



DIRECTION GÉNÉRALE DE L'ARMEMENT



Agenda

- SDR panorama
- French strategy
- CONTACT Program
- Conclusion and way ahead



SDR panorama

- Purpose
 - Increased interoperability and flexibility in the interoperability management
 - Support of network-centric operations
- Approach based on the availability of open standards (main purpose of the Winmf community)
- Waveform sharing through international forum to achieve interoperability
- Need to share also crypto for real and complete interoperability



WINNF

- Purpose
 - Coordinate international SCA standards
 - Technical exchange on SDR and Cognitive Radio
- Approach based on SCA family standards convergence



ESSOR

- Purpose :
 - Definition and development of a new High Data Rate WF (HDRWF) for Ad-Hoc mobile network in order to achieve Interoperability between the coalition forces.
 - Definition of an SDR Architecture based on US SCA in order to facilitate WF Portability amongst the six different National SDR Platforms.
- Provide the basis for development and production SDR products in Europe to meet the requirement for fielding such equipment in near future
- ESSOR Architecture identifies areas of Portability Enhancements and had complemented & improved existing US SCA



COALWNW

- Purpose
 - Cooperatively collecting, collating, and approving interoperability requirements to support joint coalition operations, and documenting these operational and technically-derived requirements to form the foundation of a functional specification for a coalition waveform.
 - Designing and developing the COALWNW WF
- Approach based on interoperability through WF and crypto shared without any study of architecture convergence



EDA : SDR Standardization Strategic Guidance Working Group

- Purpose
 - To define and promote a common European Defense position on SDR standardization ;
 - To promote excellent working relation with the most important SDR stake-holders, in or-der to ensure portability and interoperability of the various SDR products;
- Identify/define harmonized Rules and Procedures to achieve the SDR Military Standard taking into account the MODs' requirement to maintain control on the process.

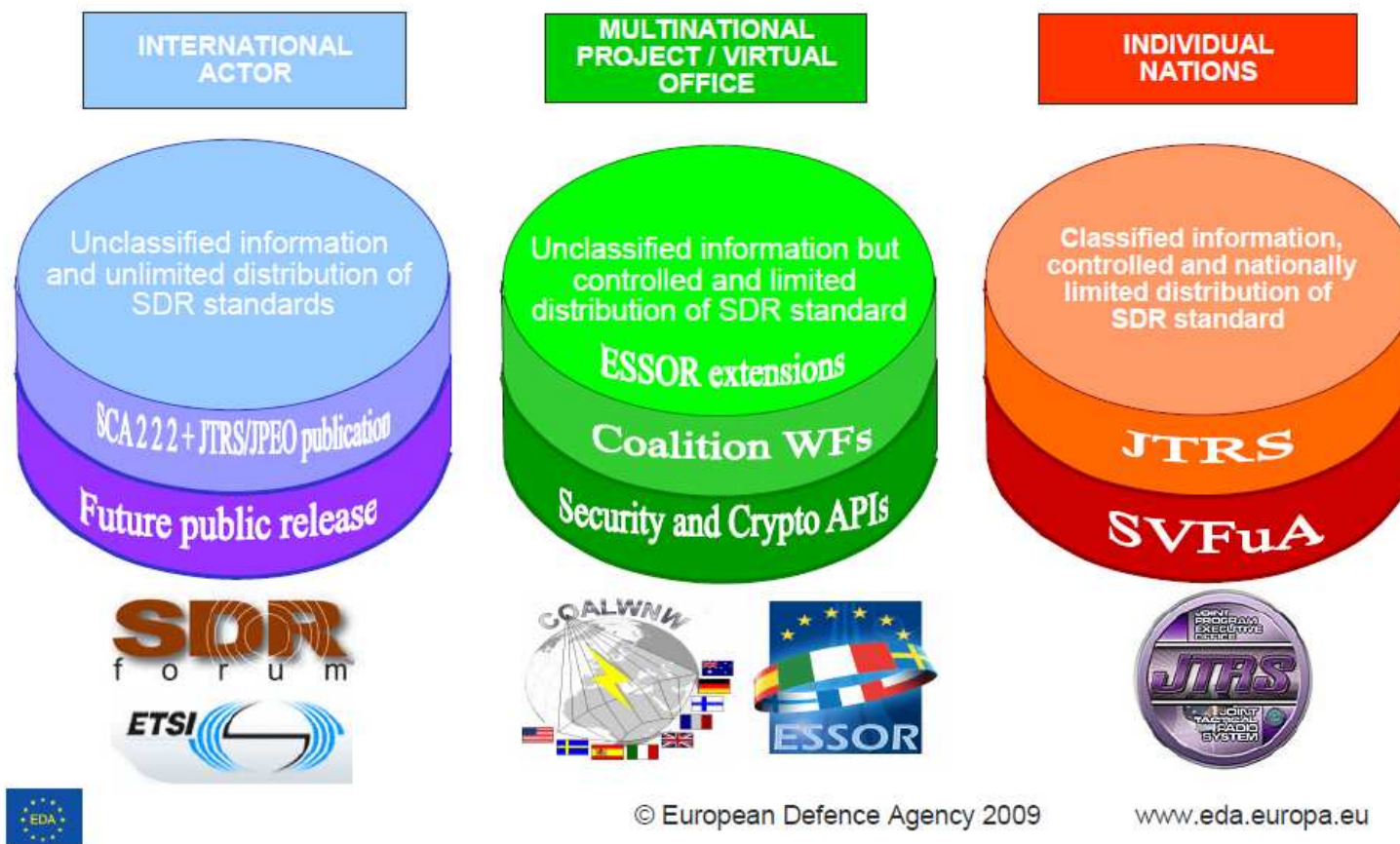


NATO C3B

- Purpose :
 - enhancing interoperability of medium-term national Software-Defined Radio projects
- Propose the HDR WF as a STANAG
- Help NATO C3B ensure that this STANAG fits into the NATO Waveform Strategy to be developed

French strategy

Three categories of SDR "standards"



French strategy implementation



CONTACT Program Digital Tactical and Theatre Communications

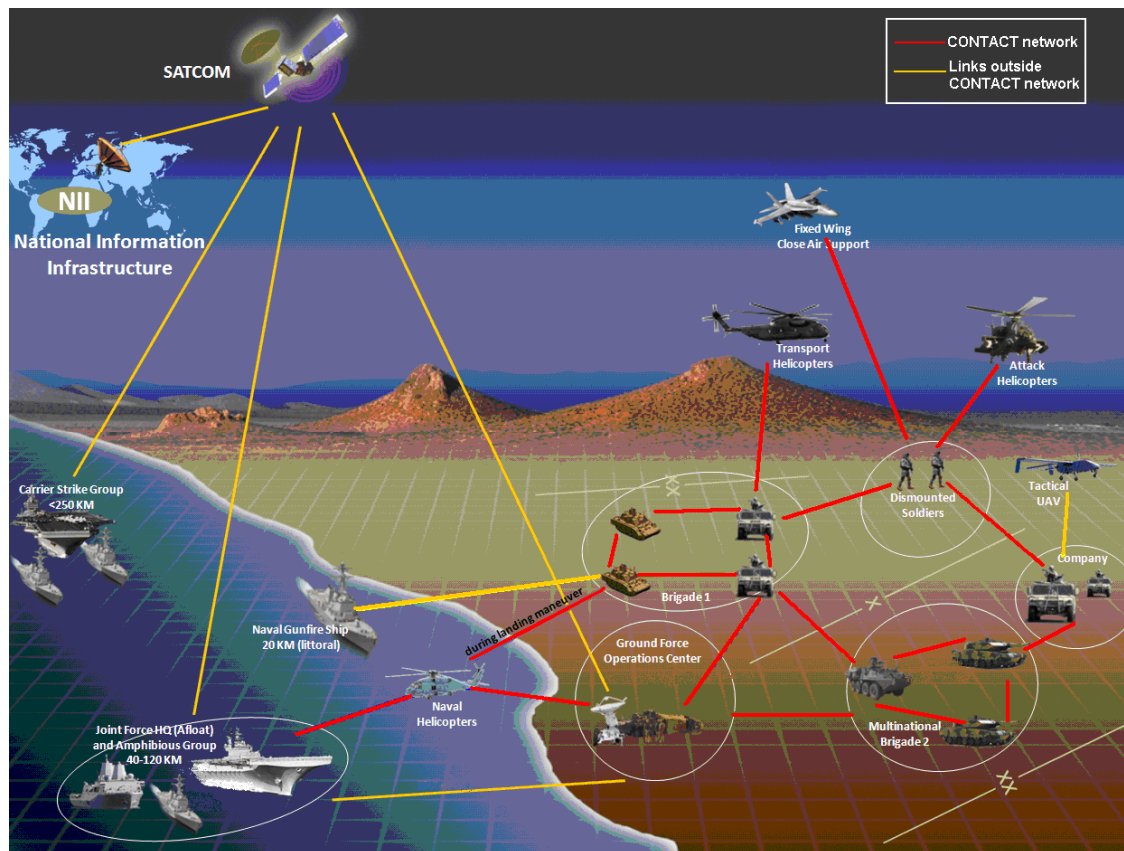




CONTACT scope

- Provide a new generation of tactical communications in support of network-centric war fighting operations
 - High Data Rate secured communications
 - Coalition interoperability
 - Flexibility – use of several waveforms on the same HW or use the same WF on different HW
- Replacement of the current tactical communication system

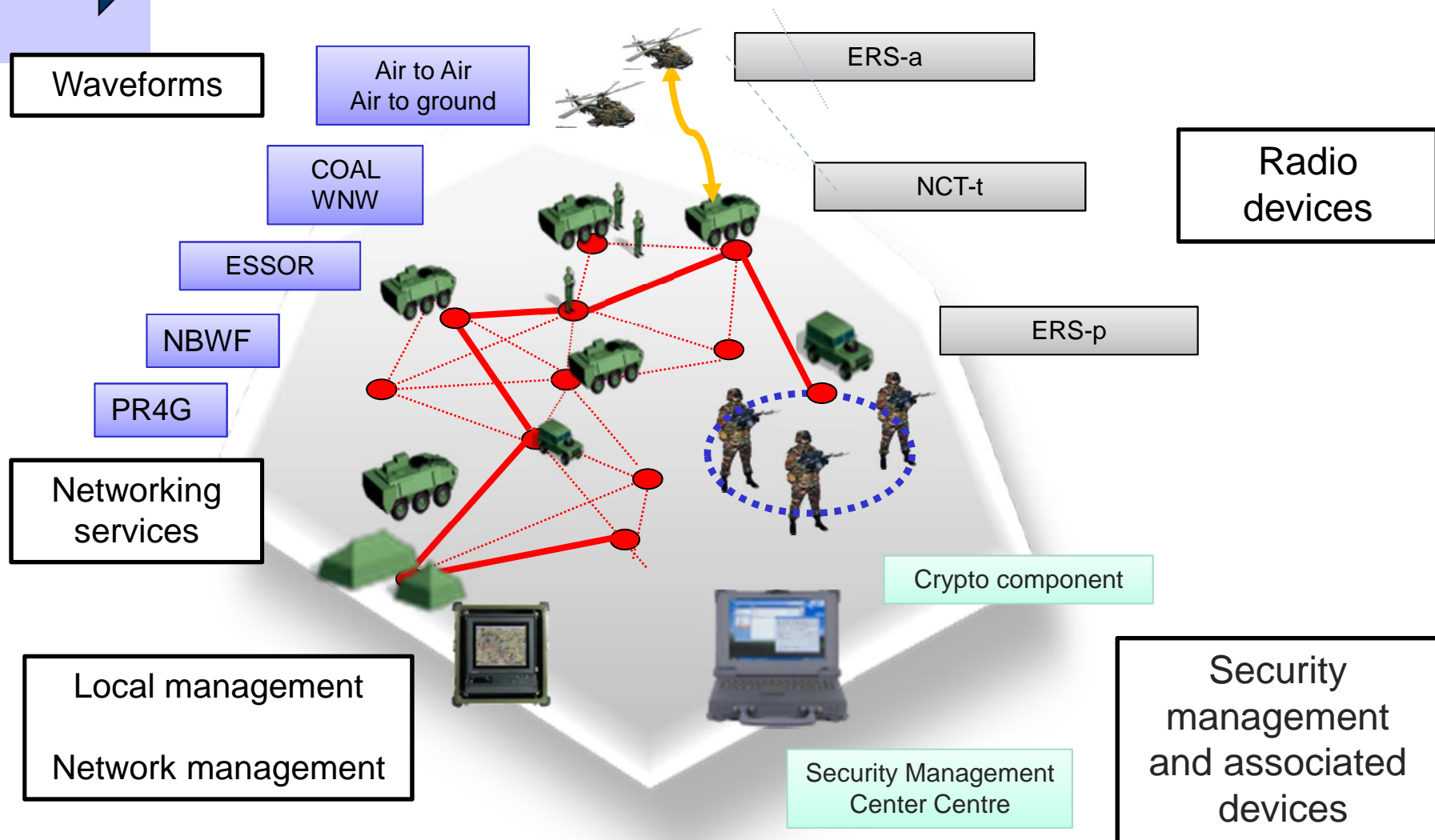
CONTACT overview



- Challenges
 - Need of high data rates,
 - Interoperability needed due to the multinational context,
 - Secured communications,
 - Large number of nodes,
 - Various node mobilities to deal with,
 - Various elongations to deal with,
 - Frequency resource highly limited
- CONTACT offers solutions to these challenges :
 - A whole new family of radio products based on software defined radio (ESSOR Standard)
 - Several waveforms
 - with high spectral efficiency
 - Including ESSOR tHDRWF o provide interoperability
 - Use of VHF and UHF components in a global network
 - E2E unified voice and data services for C4I apps and servers over heterogeneous networks (VHF, UHF)
 - Frequency management tools



CONTACT scope



A global answer to secured mobile communications needs on the battlefield



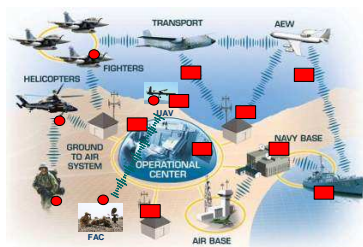
CONTACT ROADMAP

CONTACT : Networking of heterogeneous tactical radio nets

2009 2011 2013 2016 2018 2021 2025

DEPORT

- ◆ CONTACT System Definition
- ◆ Advanced studies and Technology



MINISTÈRE DE LA DÉFENSE

SV0 :
Preliminary
Technical Increment

- ◆ PR4G interoperability
- ◆ ESSOR
- ◆ First release of Tactical Node Function



Tactical NF

CONTACT

SV1 :
Key products and tri-
service technology

- ◆ CONTACT services :
IP Interface, combat voice
messaging, position report
- ◆ Multi-band Tactical
Communication Node
- ◆ Mounted / Dismounted
- ◆ Helicopters



NCT-t Vehicle

ERS-a Helos

ERS-p handheld

12th June 2013

SV2 :
3D Extension &
GA-Coordination

- ◆ Man-Pack
- ◆ Ground-Air
Coordination
- ◆ Airborne HDR WF
- ◆ Additional WFs
- ◆ System improvements



ERS-a
Fighter

ERS-m
Manpack

SV3 :
3D Extension
RVT , MIDS, Naval

- ◆ RVT / Video streaming
- ◆ ERS-MIDS
- ◆ NCT-n (naval Radio)
- ◆ HF network connection
- ◆ WFs enhancements



ERS-MIDS

Slide N°14



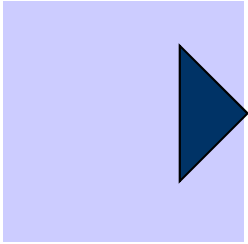


Conclusion

- CONTACT approach is built on top of European SDR standardisation initiative (ESSOR)
 - Complement & improvement of existing SCA
 - Master the decoupling between HW and SW
→ interoperability
 - Definition of a open architecture

- CONTACT will provide to our forces :
 - Up-to-date HW capable of open standards and networked centric operations
 - E2E unified voice and data services for C4I apps and servers over heterogeneous networks (VHF, UHF)
 - High performance with new HDR WF and continuity of services with legacy WF
 - Supporting battle digitization rationalisation improvements
 - Smooth migration to new systems
 - Providing a new range of software Defined Radio products,
 - Achieving high spectral efficiency, and smart frequency use,

- CONTACT paves the way for future communication needs while seamlessly interconnecting with coalition & legacy systems



Questions?