

# Battlelabs The EADS approach



**André-Hubert ROUSSEL, System Design Center  
AFCEA, October 12th 2006**

## Battlelabs in the world

- **From US...**
  - Capability Based Planning
  - Simulation Based Acquisition
- **..., UK & NiteWorks...**
- **..., to Continental Europe countries (and NATO)**
  
- **Federations in synthetic environments of simulations, hardware, software and man in the loop**
  
- **All major defence players have built battlelabs**
  - NG CWIN, Boeing BIC / SOSIL, BAe BMEC, Thales BTC/TIC, DCN Solaris, EADS SDC/NetCOS...
  
- **MoDs, inc. Doctrine and Transformation centers and Planners / Program managers want to use battlelabs**
  - UK DXC, FR CICDE, FR SAIS LTO, GE ZTBw Common Umbrella & Co, NATO ACT, EDA LoI NEC, Singapore SCME, Middle East,...

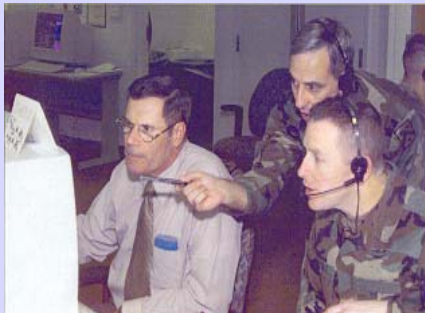
# Overall Context in EADS:

•Support internal & external customers in Transformation and Network Centric System-of-Systems implementation throughout life cycle

- National Doctrine Centers, NATO/ACT, EDA, JFCOM
- EADS BUs Programs

•Based on a strong methodology, architecture, modelling, simulation & experimentation framework

**Military or civil  
Authority experts**



**Operational concepts  
Design and  
evaluation**

**Programs**



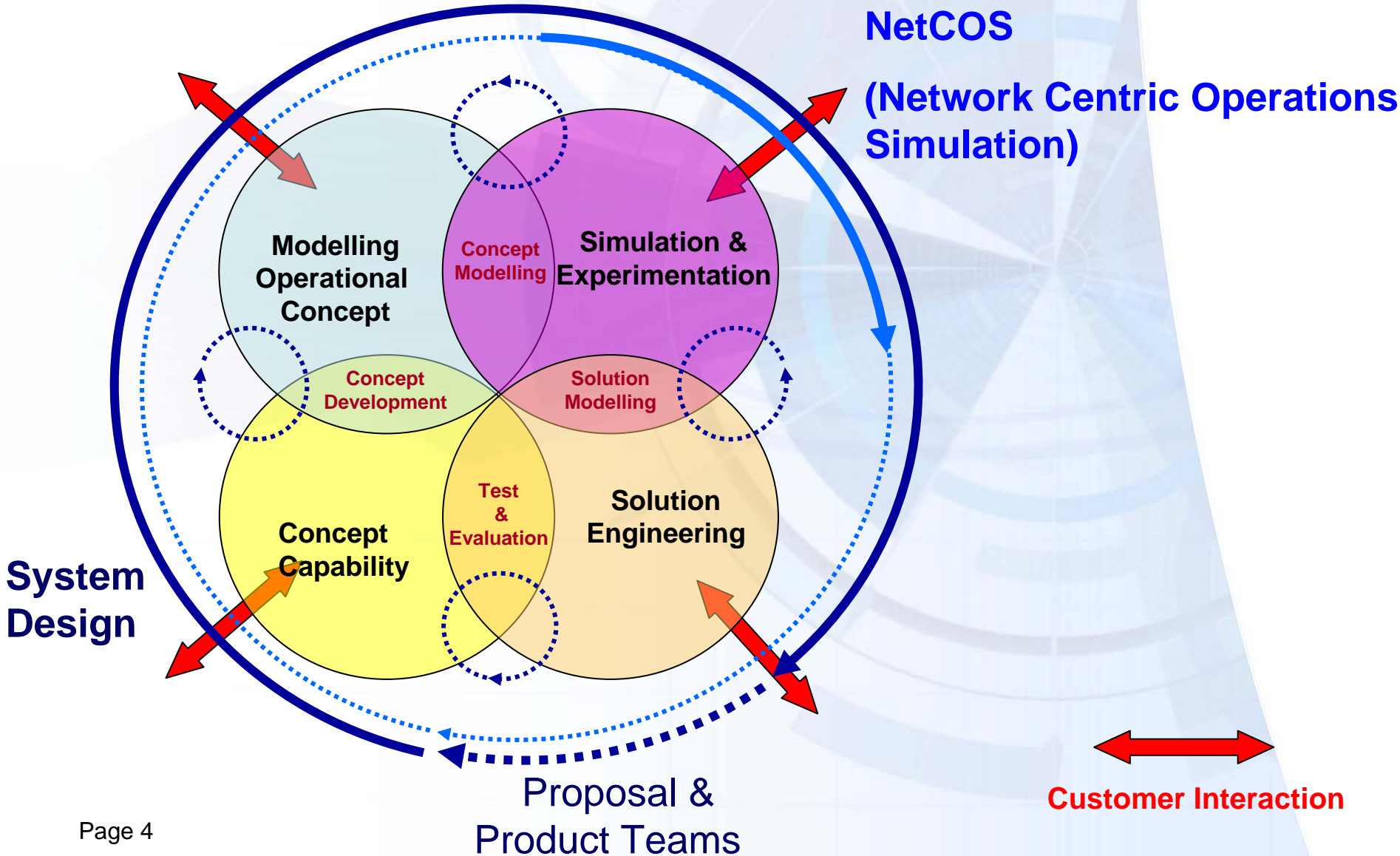
**System-of System  
Design,  
Evaluation and  
Integration**

**End users**



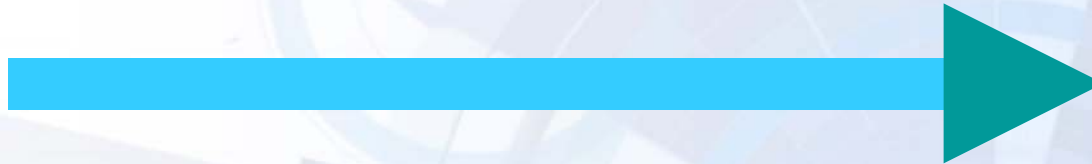
**Training,  
Exercices,  
Operational  
Evaluation**

# The Closed-Loop Transformation Cycle

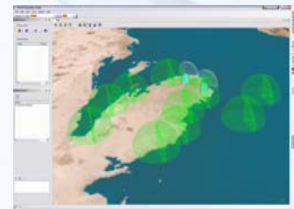
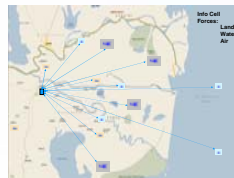
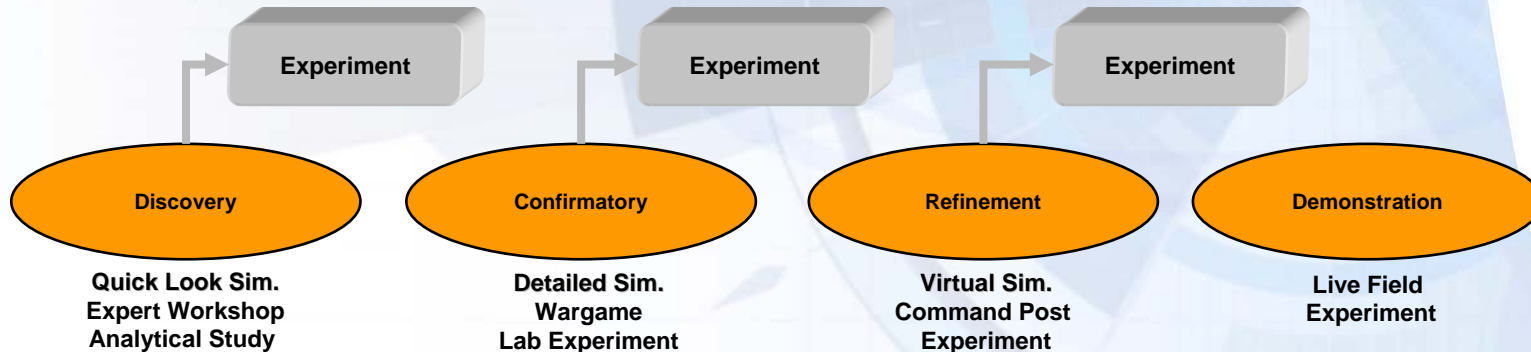


# Spiral Development

Concept  
Development  
Path

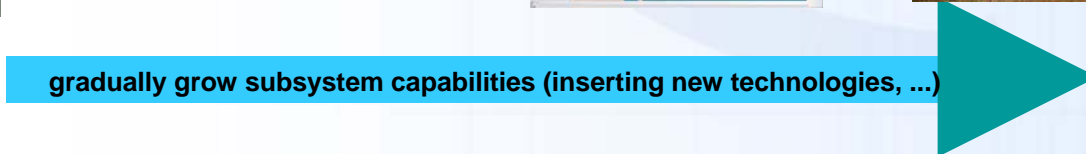


Idea      Rough Concept      Detailed Concept      Result



Prototype  
Path

gradually grow subsystem capabilities (inserting new technologies, ...)



# Experience on Border Security

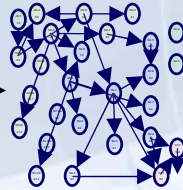
## METHODOLOGY STEPS

## TOOLS

**Operational  
concept definition**

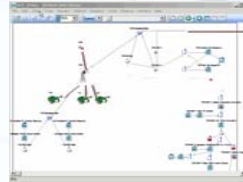
*Requirements  
For coastal &  
Border surv.)*

**Process  
modeling**



*System Architect  
(Dodaf OV 2 to OV6)*

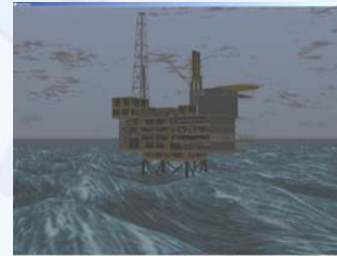
**System  
Process simulation**



*Simul 8*

**Performance  
Validation**

*Synthetic environment  
Real C2 system  
Man in the loop*



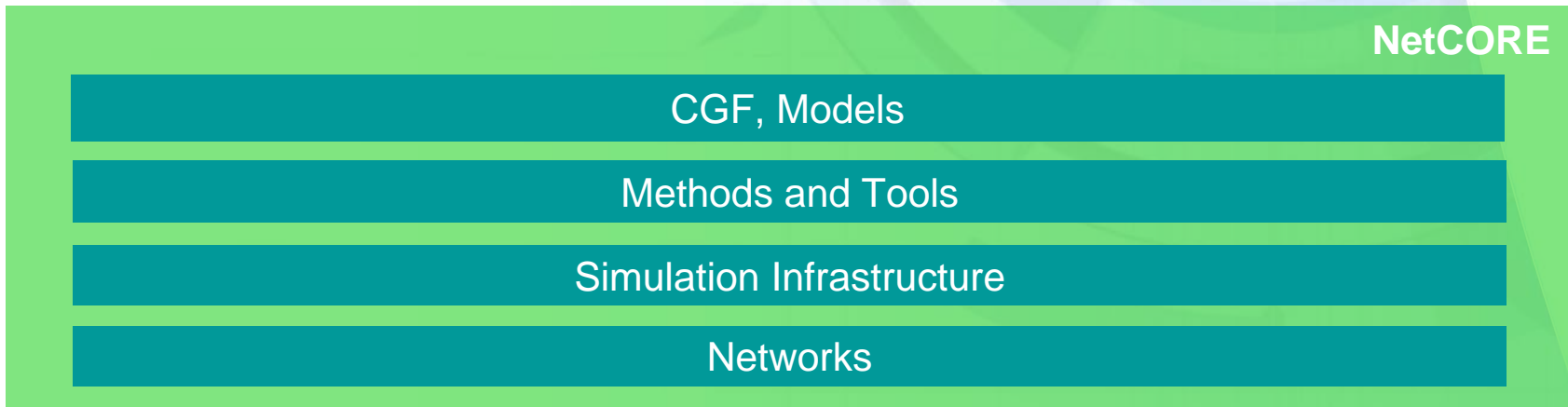
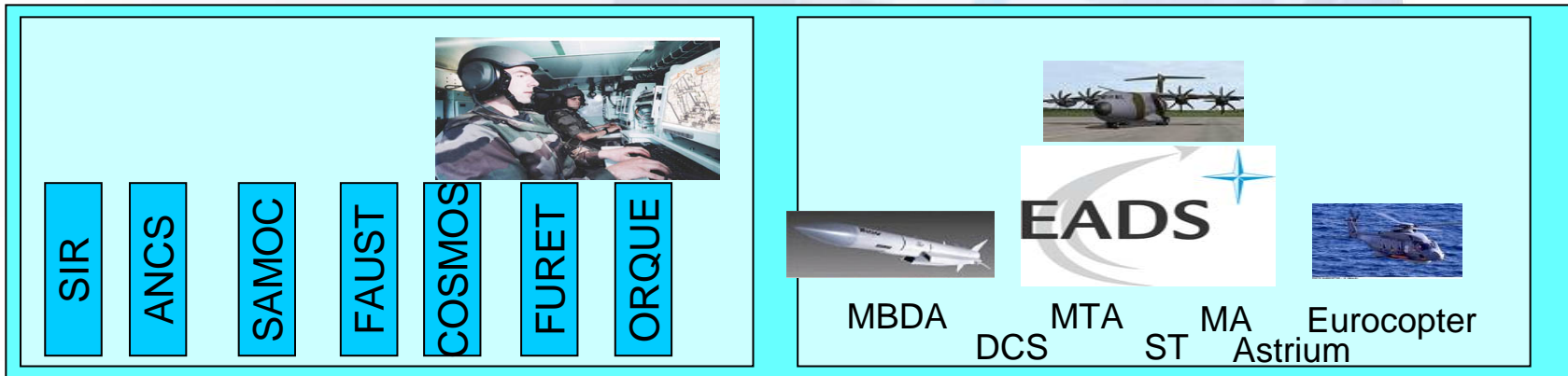
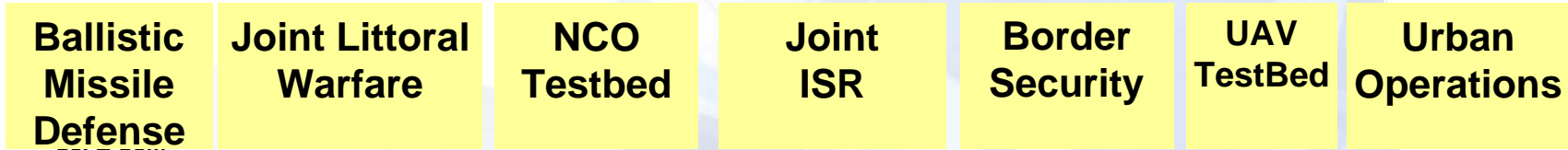
- Dialogue with the Customer
- Operational Effectiveness improvement
- Lessons learned / Hybrid Experiment with HW/SW and Man in the loop
- Reduction of Engineering Efforts
- Design to -y
- Mitigation of Technical Risks
- Improvement of Quality

# A distributed Network of Experimentation Centers



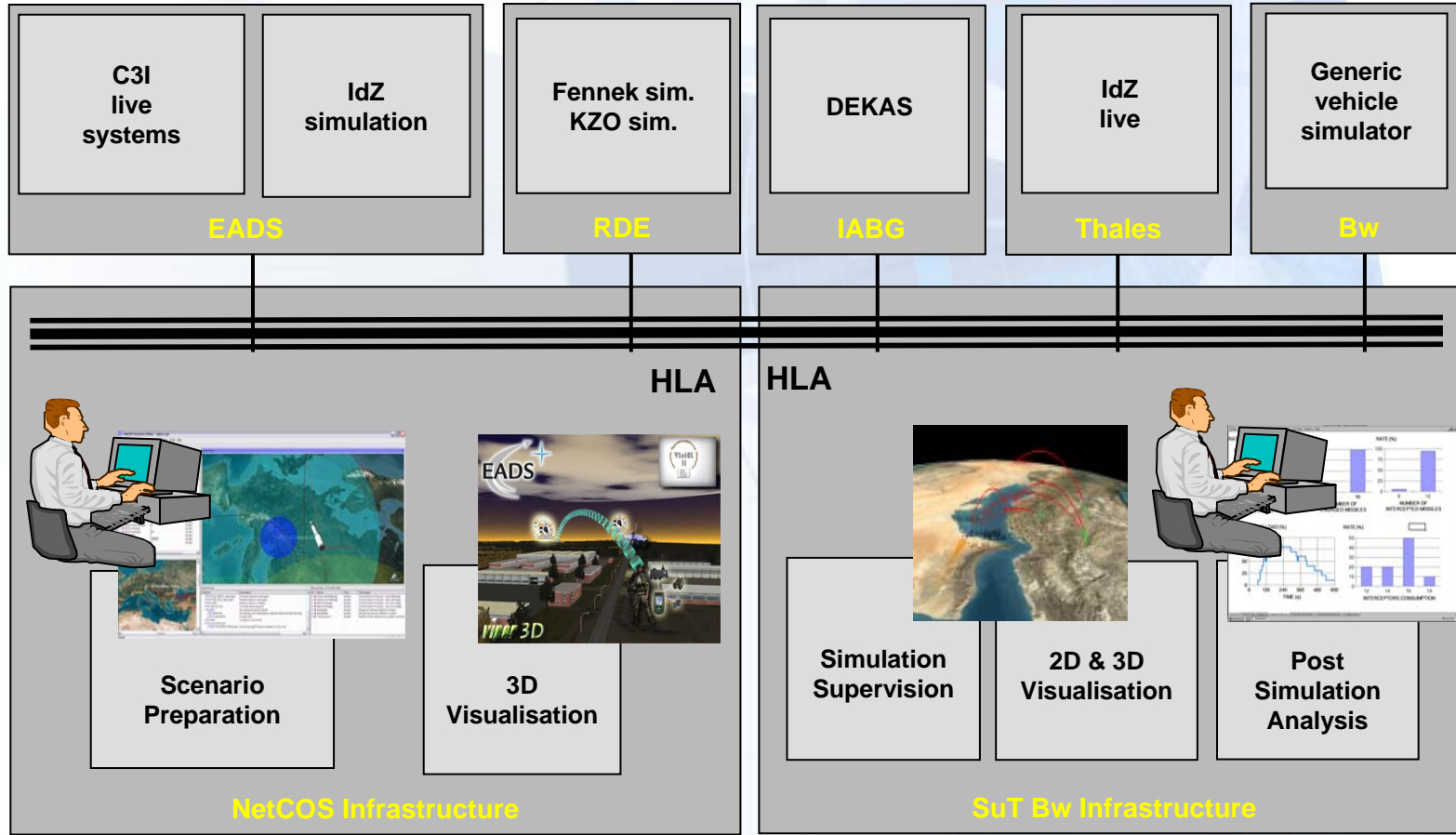
- Interconnected and play multinational experiments
- Mobile platform
- 20 M€ investment

# Federating EADS Systems and Simulations



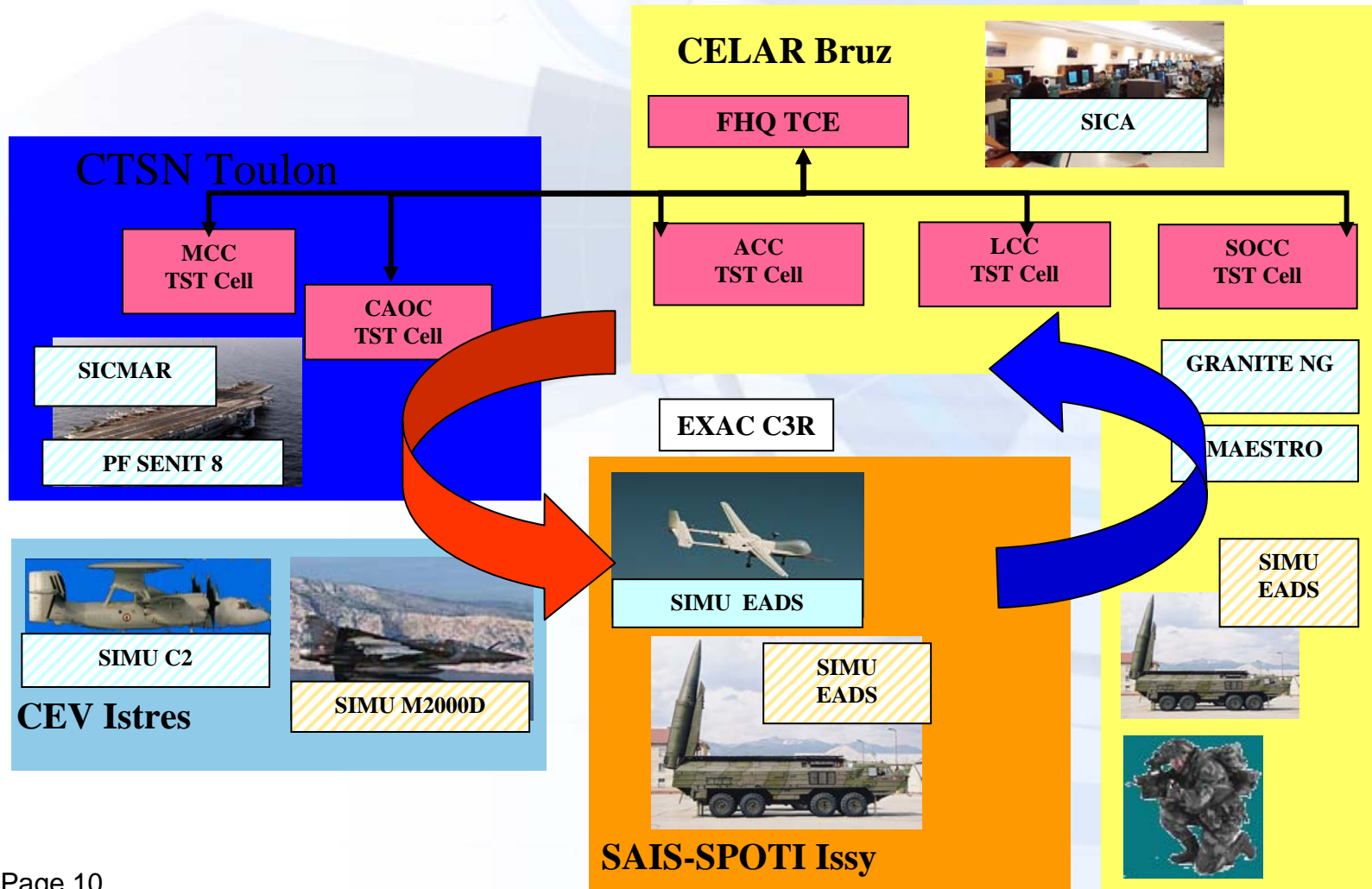
# Linking with Industrial Partners

## VinTEL Shared Tactical Situation example



# Taking into account customer existing assets

## Time Sensitive Targeting Demonstration example



## **What's next ?**

- **Networks exists (encrypted internet, EXAC C3R, CBFLNet,...)**
- **Standardization remains critical (NCO IC)**
- **Technology sharing as well, especially US-EU**
- **Contractual schemes to allow better agility still under construction**
- **Intellectual Property frameworks and preserving Open Competition are still a sensitive issue**

# French LTO and Industrial Battlelabs

- **Industrial battlelabs more specifically bring a large variety of assets, a multinational experience, technology and innovation, flexibility and velocity**
- **The French LTO brings a neutral environment to facilitate capitalization and sharing, and is the reference and framework for the french MoD**
- **Questions :**
  - How to capitalize industry investments and know-how, how to create better synergies ?
  - What contractual scheme for improving reactivity beyond studies and programs ?