

Ten years for Europe to be a key player of its defence against ballistic missiles

Astrium Space Transportation

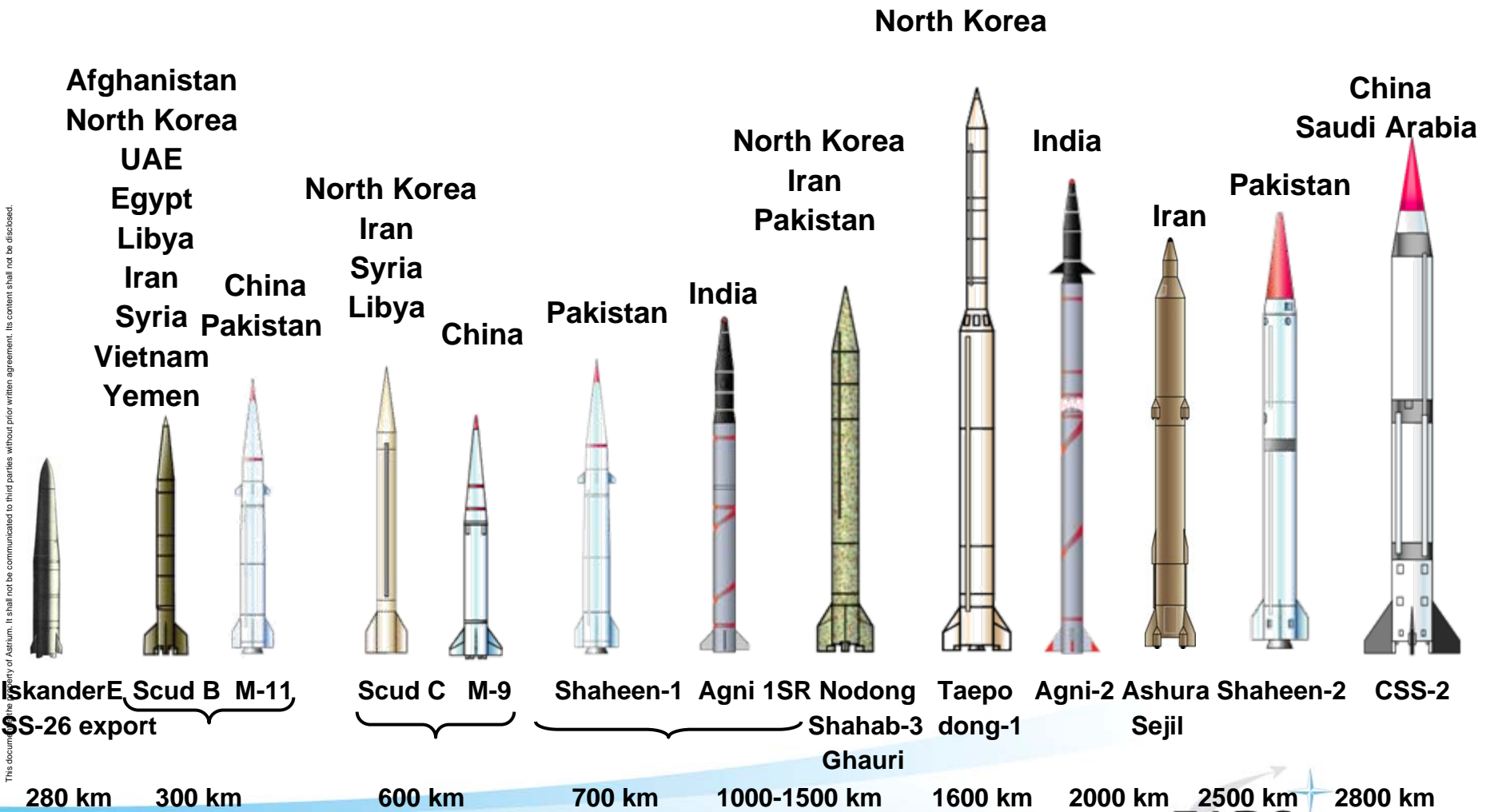
Patrick Lefort – 8 Dec 2009

All the space you need



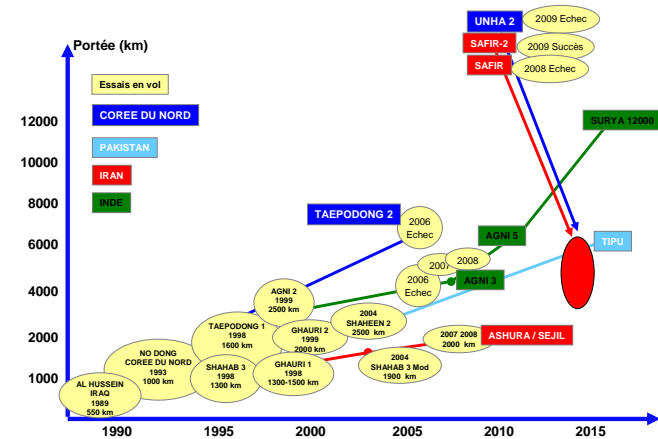
Ballistic Proliferation: Current Panorama

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Ballistic Proliferation: Mid-Term Evolution

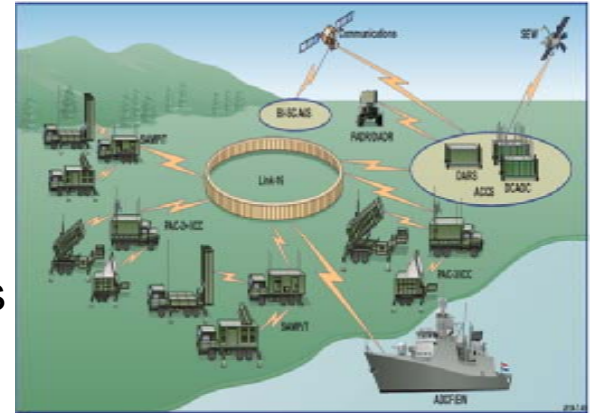
- Regular and proven performance evolution
- Major proliferating countries master key technologies:
 - Liquid and Solid Propulsion
 - Atmospheric Stage Separation
 - Payload under Fairing
 - RV
- Today all have MRBM: 2000 km
- In ten years, all could have IRBM: 4000 km



NATO & Missile Defense

■ NATO Theater Missile Defense

- A program: ALTBMD – IOC 2012 (Lower Tier)
- To defend NATO forces and high value assets
- SRBM / MRBM
- NATO C2 – National sensors & interceptors



■ NATO Missile Defense (MD)

- A phased feasibility study
- To defend NATO territories
- SRBM / MRBM / IRBM / ICBM

SRBM: < 1000 km
MRBM: < 3000 km
IRBM: < 5500 km
ICBM: > 5000 km

■ Key issues

- ALTBMD Upper Tier – MD convergence
- Link between NATO & US MD
- European role

Political Problem

US Phased Adaptive Approach for MD in Europe

■ Phase 1 - 2011

- Exo interceptor SM3 Bk 1A (in service) – sea based
- SRBM / MRBM

■ Phase 2 - 2015

- Exo interceptor SM3 Bk 1B (under qualification) – sea & land based
- SRBM / MRBM

■ Phase 3 - 2018

- Exo interceptor SM3 Bk 2A (under development with Japan)
- SRBM / MRBM / IRBM

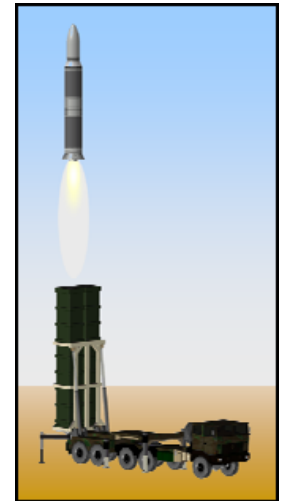
■ Phase 4 - 2020

- Exo interceptor SM3 Bk 2B (to be developed)
- SRBM / MRBM / IRBM / ICBM

SRBM: < 1000 km
MRBM: < 3000 km
IRBM: < 5500 km
ICBM: > 5000 km

Missile Defense: a necessity and an opportunity for Europe

- European-wide missile defense is a strategic issue
- Europe need to invest now in its defense...
 - or to both pay cash and be dependent later
- Europe could bring in kind to NATO MD
 - Early Warning systems (satellites, radars)
 - Upper Tier interceptors
- Affordability is key
 - Assess and implement what is just needed for Europe
 - Exo interceptor (Exoguard concept)
 - Cost effective: Can defend large area with few batteries
 - Robustness wrt threat evolution
 - Proven technologies
 - Cooperation with NATO nations (Europe, US) makes sense
 - Full system price comparable to the EU Galileo program



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