



NATO's Ballistic Missile Defense Plans – a game changer ?

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www.ifsh.de and www.armscontrol.de

- 1. Lisbon Summit's Decisions**
- 2. Current Capabilities and Technical Reliability**
- 3. Cooperation with Russia**

The Research Project

Missile Defense in Europe – A cooperative study by the *Academy of Sciences in Hamburg* and the *IFSH*

Chapter 1: Technology and Proliferation of Ballistic Missiles

Chapter 2: Missile Defense Technologies,
Missile Defense Programs outside Europe

Chapter 3: Ballistic Missile Defense (BMD) in Europa,
Evaluation of the future Capabilities of the US Systems

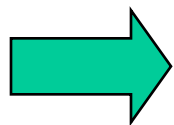
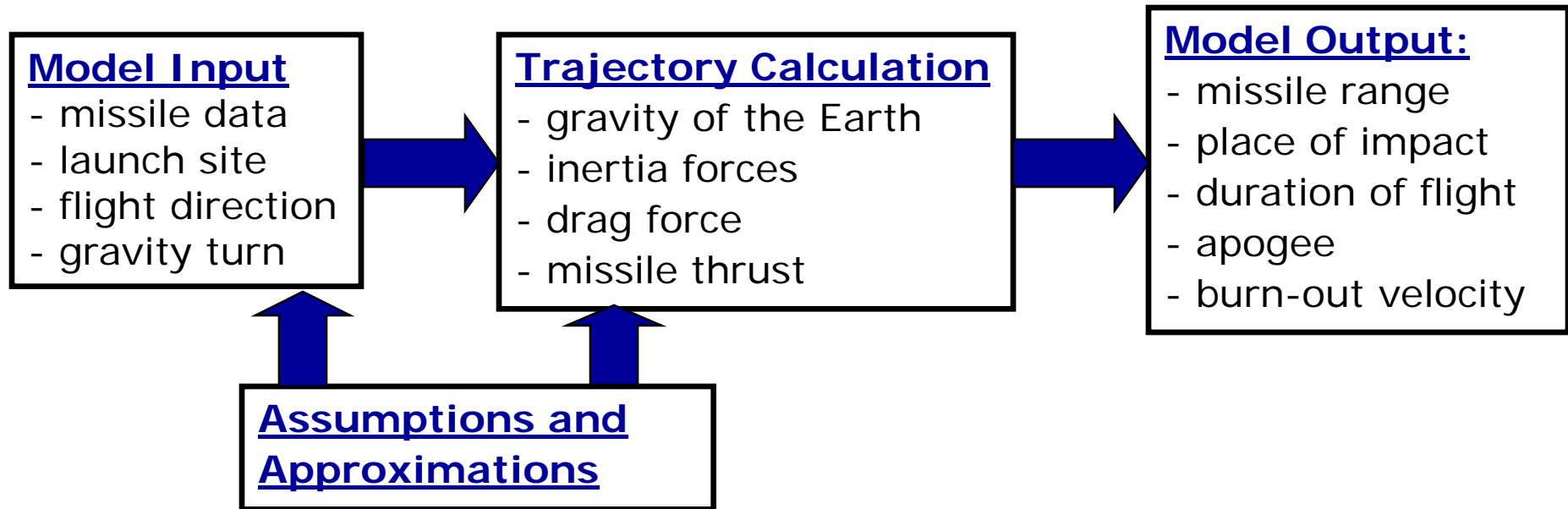
Chapter 4: Possible impact of BMD on Disarmament, Arms Control
and International Relations

Conclusions and Recommendations

Modelling of Missile Flights



Mod5, a physical model for the simulation of ballistic missile trajectories has been developed



Allows to answer the question, if and where an attacking missile can be reached

NATO's New Strategic Concept, November 20 2011 :

- Proliferation of ballistic missiles (BM), which poses a real and growing threat to the Euro-Atlantic area [#2]
- NATO develops “**the capability to defend our populations and territories** against BM attack as a **core element** of our collective defence” [#19]
- NATO “will actively **seek cooperation on MD** with Russia” [#19]

NATO's Summit Declaration, November 2011 :

- Essential elements of the **(comprehensive) review** would include the range of NATO's strategic capabilities required, including NATO's nuclear posture, and MD [#30]
- The aim of a NATO MD capability is to provide **full coverage and protection for all NATO European populations, territory and forces** against the increasing threats posed by the proliferation of BMs, taking into account the **level of threat, affordability and technical feasibility** [#36]

NATO Experiences

- NATO has **no** joint BMD experiences
- “**Action Plan**” developed for June 2011
- “to explore opportunities **for cooperation with Russia**”
- Most programmes are **national**: Patriot, Meads, Thaad
- First candidate is the US Aegis-BMD- system (ship/land)
- US- EPAA is “welcomed as a valuable national contribution to the NATO MD architecture” [Lisbon Dec #37]
- ALTBMD-Program is a **tactical** Command and Control Project to net sensors and systems against MRBMs
- **Costs**: 800 mio. € (14years), + 200 mio. € 😊
- Poland, Czek Republic, Romania, Bulgaria are ready for deployment of Aegis-BMD-Components, Turkey???

Obama´s „Phased Adaptive Approach“: Aegis-BMD-System



- Build-up of a regional BMD-system in Europe against MRBM´s
- Six (three) ships equipped with SM-3 Block I (II) can cover Europe
- SM-3 is **not tested** under realistic conditions; countermeasure Problem is not solved, therefore BMD is „shaky defense“
- Next generation of interceptors SM-3 Block IIA/B (2018) has Anti-ICBM capability and can affect Russian deterrent
- Number of interceptors are not limited, performance of interceptors will be improved and ships can be deployed everywhere which is a legitimate concern by Russia and esp. China
- Cooperation with Russia is offered, but unlikely
- Cost and arms control consequences are underestimated

European Phased Adaptive Approach

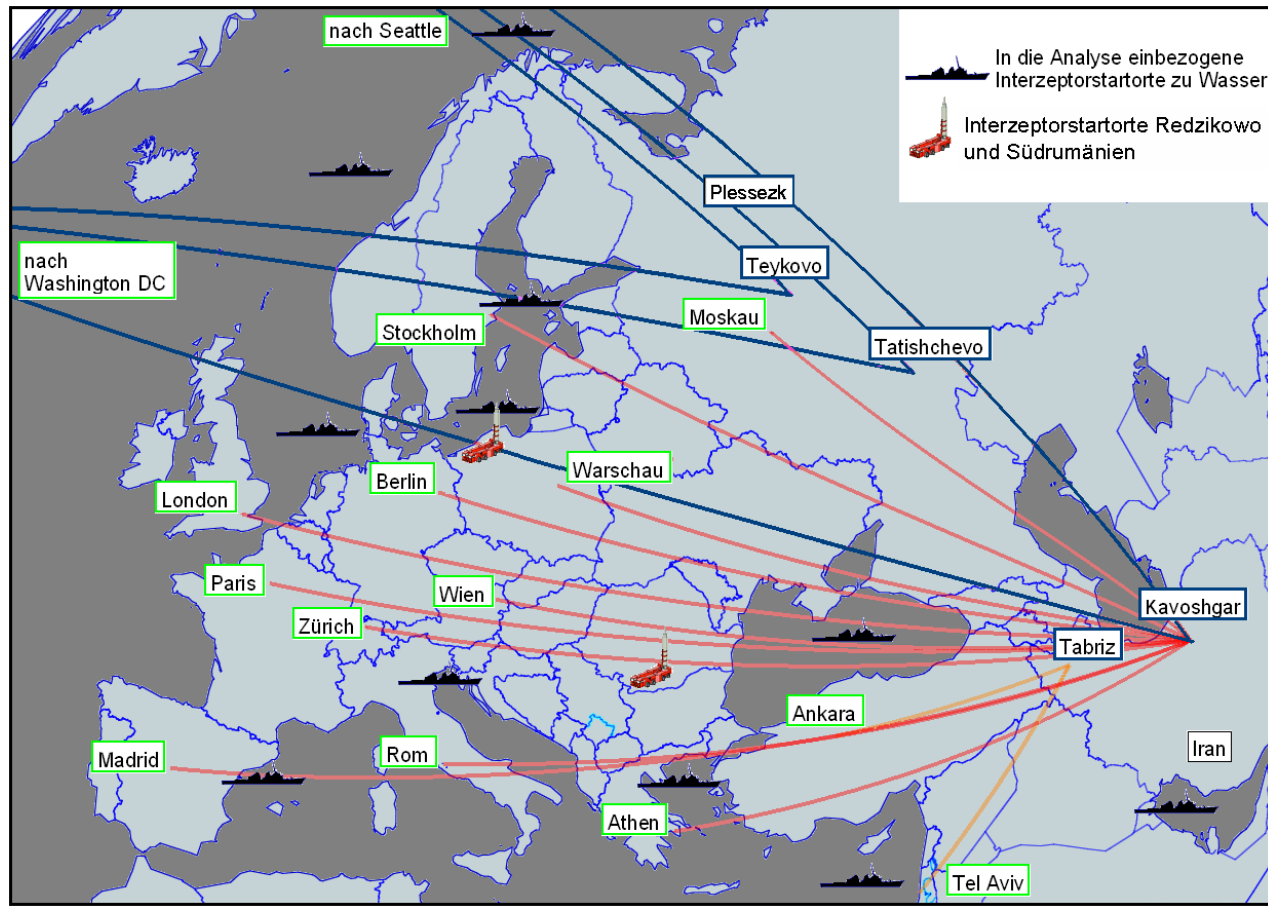
Phase	Intro	BMD-System	Deployment area	Directed to
I	2011	PATRIOT; THAAD; FBX, AEGIS SM-3 Block IA;	Mediterranean Baltics Black Sea	S/MRBM
II	2015	+ Aegis SM-3 IB	+ Land-based Romania	S/MRBM
III	2018	+ Aegis SM-3 IIA	+ 3-4 sites + Poland	SRBM/MRBM/ IRBM(ICBM)
IV	2020	+ Aegis SM-3 IIB	Possible only 2 land-based sites	IRBM, ICBM

Proliferation of Ballistic Missiles



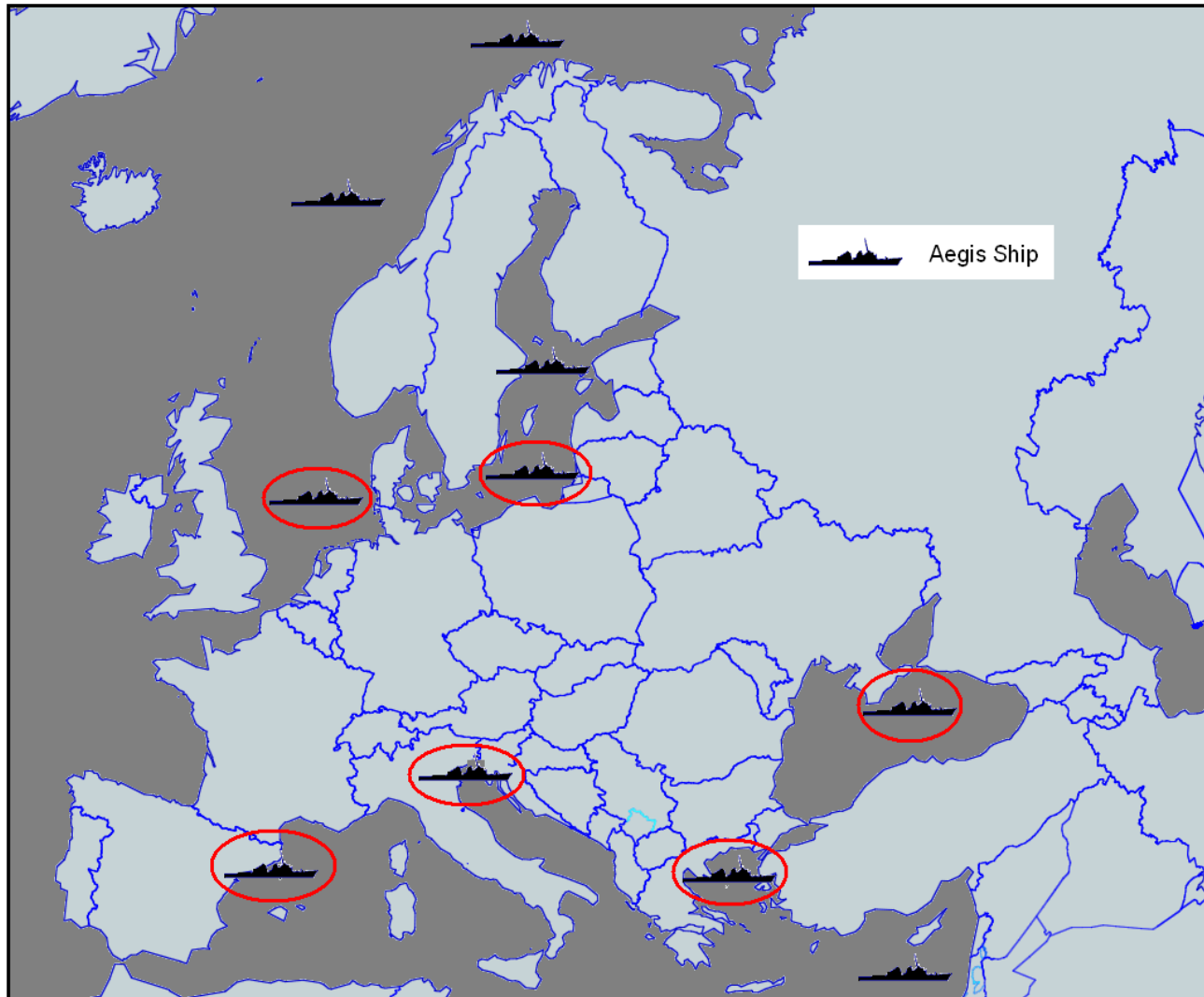
- Only the five NPT **Nuclear Weapon States** own Ballistic Missiles (BM) with sophisticated technology and ranges > 3,000 km
- **North Korea** and **Iran** are developing MRBM and – like **Israel, India, Pakistan and Saudi Arabia** - possess missiles with ranges of more than 1,000 km
- Their BM-technology is based on older Russian/Chinese technology
- Future path of the Iranian and North Korean missile program is unknown, but ambitious (Iran) not successful (North Korea)
- The development of ICBMs is much more difficult than claimed by government authorities
- Dozen of countries have (old) missiles with shorter ranges

Interceptor Deployment and hypothetical trajectories form Russia and Iran

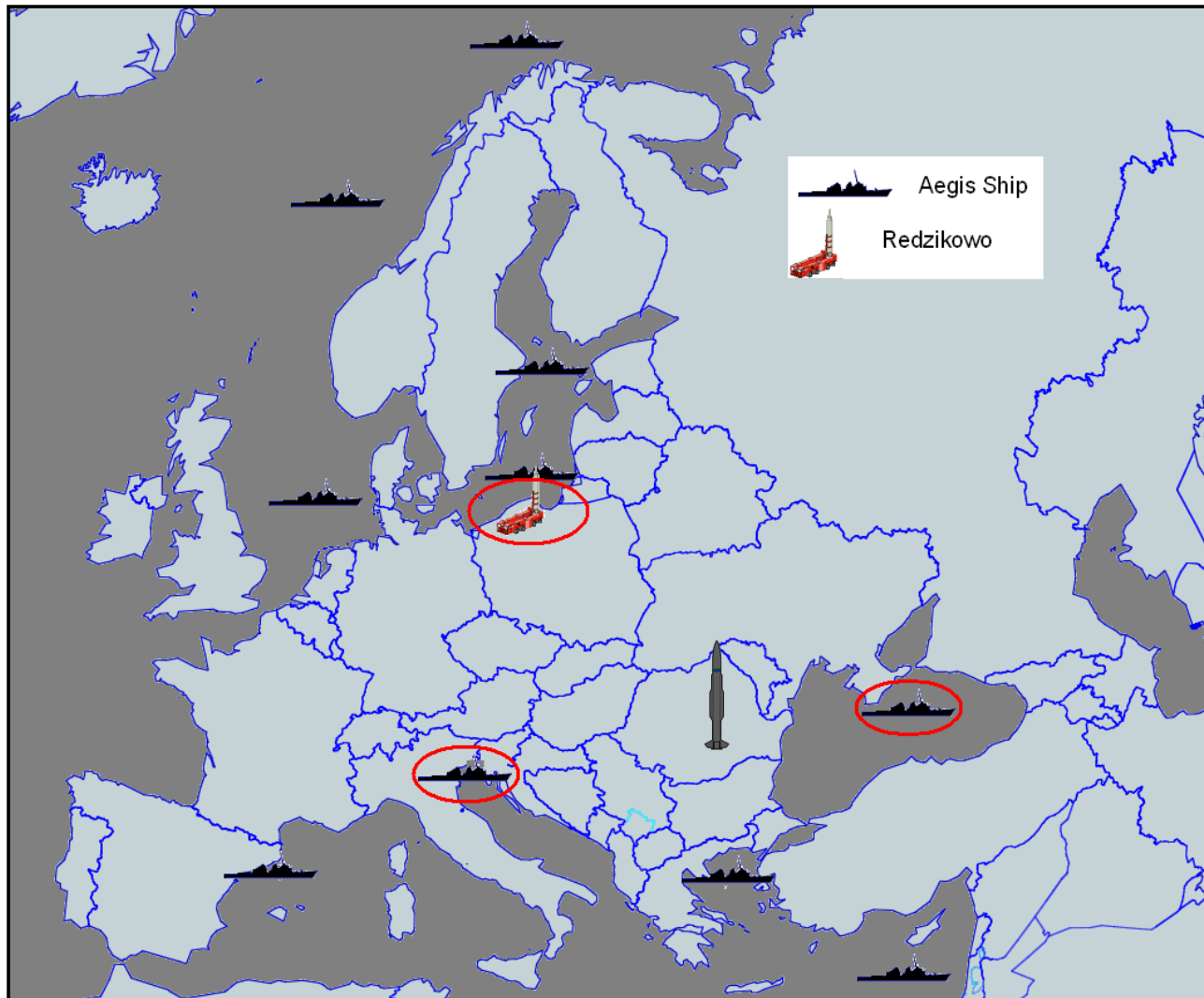


Different scenarios with various model missiles, launch sites, targets, interceptors, interceptor deployments and trajectories.

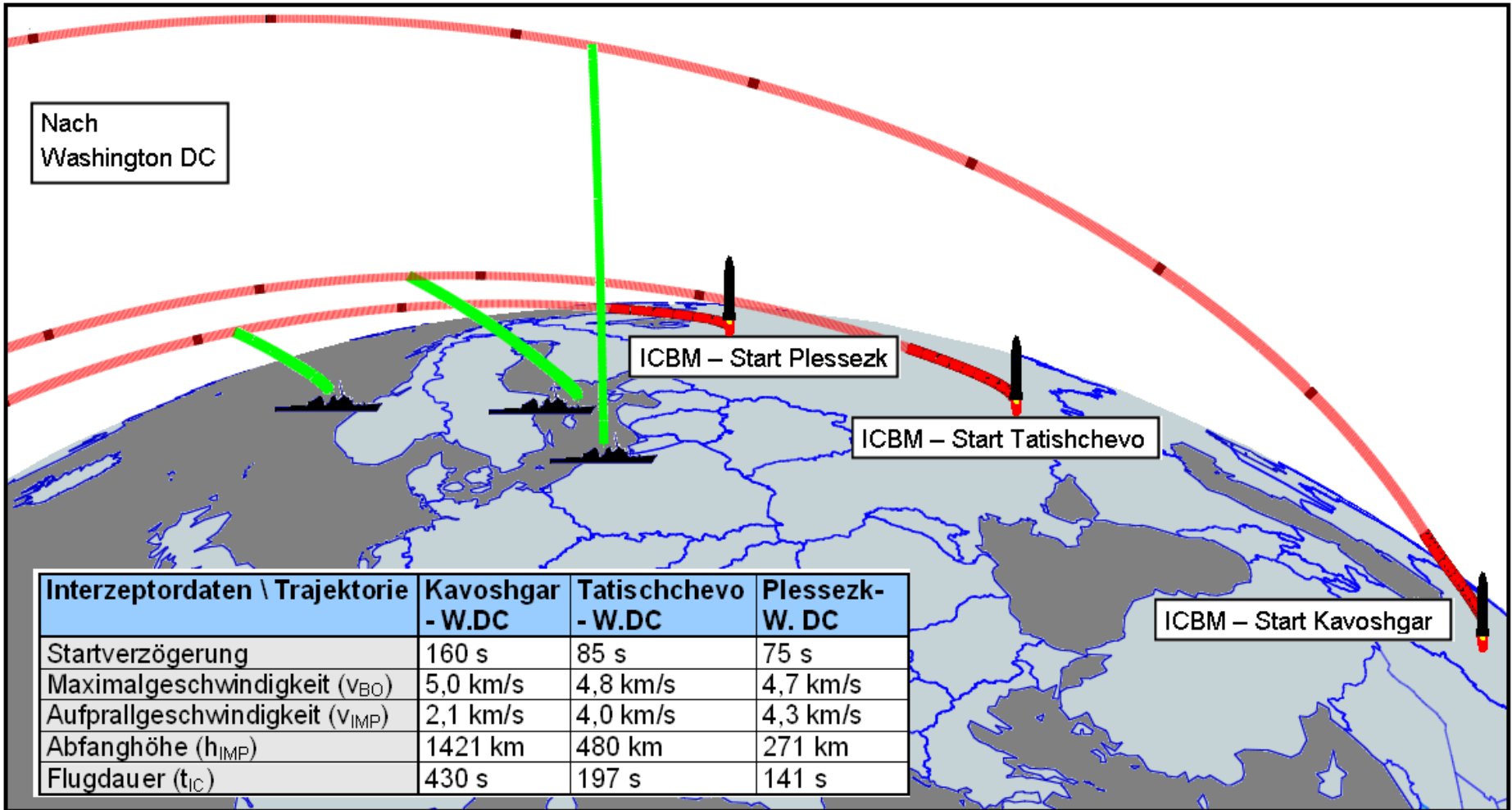
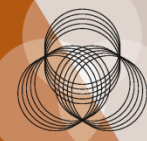
Defense with SM-3 Block I



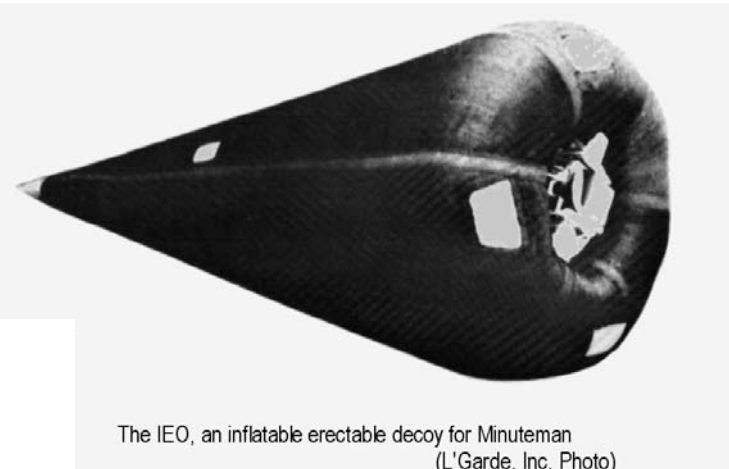
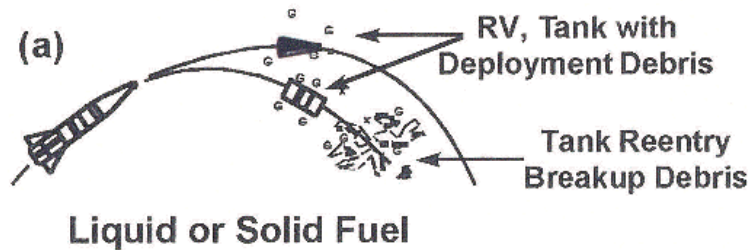
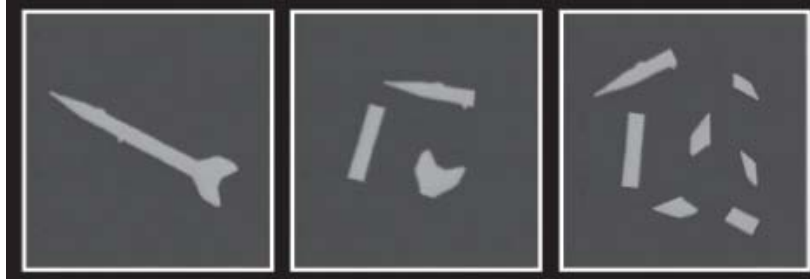
Defense with SM-3 Block II



Reachability of ICBMs



Unsolved „Countermeasures“ Problem



2002-2009 MDA: 8 of 10 successful „target destroyed“

Lewis/Postol:
2 hits out of 10

- Stealth Warhead
- Aluminium Strips
- Elektronical Sender
- Debris of the upper stage
- Submunition



1. The HTK technology has not been tested **under realistic conditions**
2. **Location:** The Aegis BMD system can, in principle, to defend Europe against Iranian IRBM
3. Unclear **costs/effectiveness** require accurate budget and mission review
4. An introduction of **faster interceptors** (phase III/IV) could have an effect with respect to Russian ICBMs in West Russia.
5. A potential adversary has **many options to bypass** the existing BMD systems (CMs or intensified rocket production = arms race).
6. The **reliability** of a EU-BMD-system can only be seen in combat
7. NATO´s future BMD system is due to it´s inherent unreliability an **additional component to deterrence** not a substitute
8. The BMD debate **masks the real problem:** nuclear proliferation and nuclear security, esp. it denies other likely delivery system (CM,UAVs)
9. BMD has an inherent ASAT capability and there are no international rules prohibiting the destruction of satellites (OST 1967)

3. Russia´s Concern, Future Cooperation and Arms Control/Disarmament

- Joint cooperation on tactical MD can be the first real security cooperation with Russia and a **litmus test** for both sides political will. At best it could be a **game changer** for the European security architecture
- If there is political will and **if Iran/Middle East** is the problem Joint TMD can be organized
- There are **many obstacles** which could derail European Security and arms control in Europe:
 - CFE-Treaty and the debate of the withdrawal of TNWs
 - Iranian problem
 - N-START Implementation and N-START-Follow-on
 - Domestic stakeholders: Radar in Georgia
 - Aim, architecture etc. unclear: one or two systems

Russia´s Concern

- **N-START Follow-On:** Less than 1.000 warheads?
 - Prompt Global Strike?
 - US and RUS might argue to give up: First strike capability, Triade, counterforce doctrine, no-first use
 - Including tactical nuclear weapons
 - Weaponization of space and BMD
 - **Missile defense and strategic stability ?**
- Taking into account that „strategic offensive arms of one Party do not undermine the viability and effectiveness of the strategic arms of the other Party“ [Federal Law of RF on N-START, 2011

Cooperation with Russia

President Medwedev: „full equality or compensation of an emerging imbalance“ ? But which imbalance: nuclear deterrent? Conventional ?

Joint Tactical BMD System: „possible“

1. Joint Data **exchange**, BMD **exercises** and observers („**transparency**“)
2. Integration of Sensors (Radar/Space) in a tactical BMD system and common BMD HQ for coordination and data exchange („**Partnership**“)
3. Joint tactical BMD-system: C², sensors, interceptors („**hardware**“) **veto?**
4. **Problem: demarcation between TMD and strategic BMD** (agreement)

Joint Strategic BMD System:

1. JDEC in Moscow , BMD exercises and observers („**transparency**“)
2. Limitation of strategic deployments (Arctic?) and interceptors („**Arms Control**“)
3. **Treaty** on Prohibition of Acts against attacks of objects in space („**OST**“)
4. New Strategic Stability? („**new nuclear doctrine**“) ➡ Global Zero¹⁶

