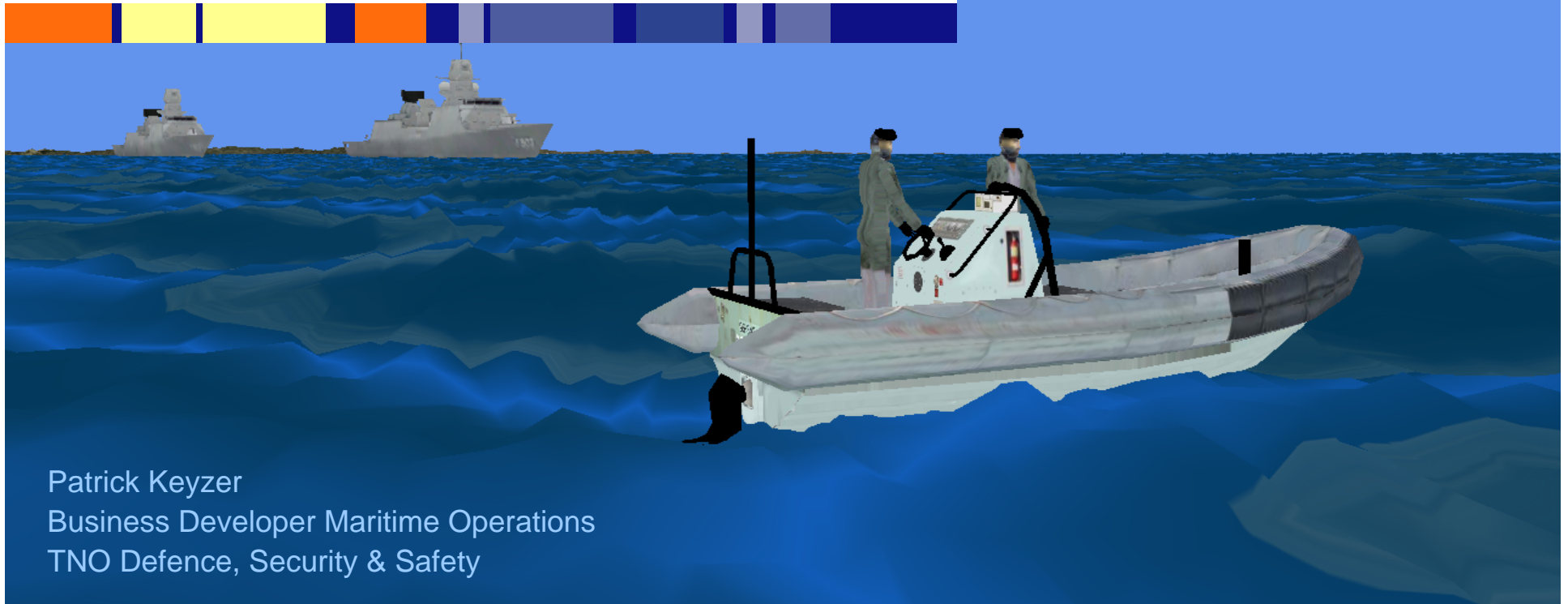


Modelling & Simulation Support for Counter Piracy

NNAG Workshop



TNO | Knowledge for business

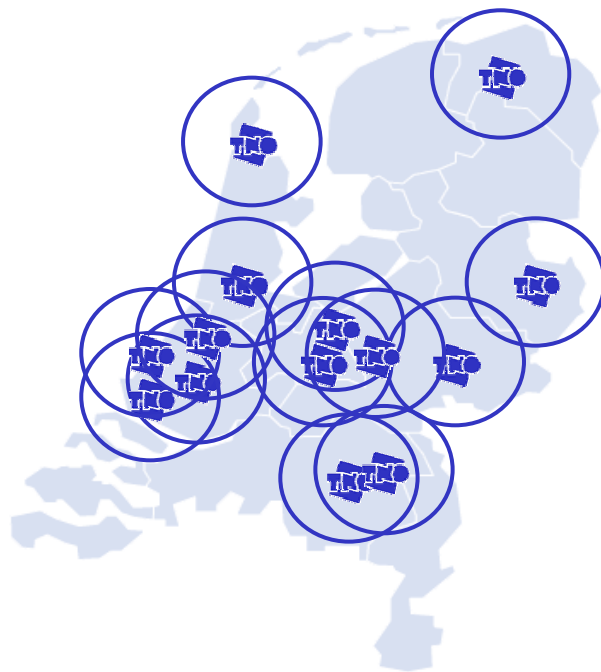


Patrick Keyzer
Business Developer Maritime Operations
TNO Defence, Security & Safety



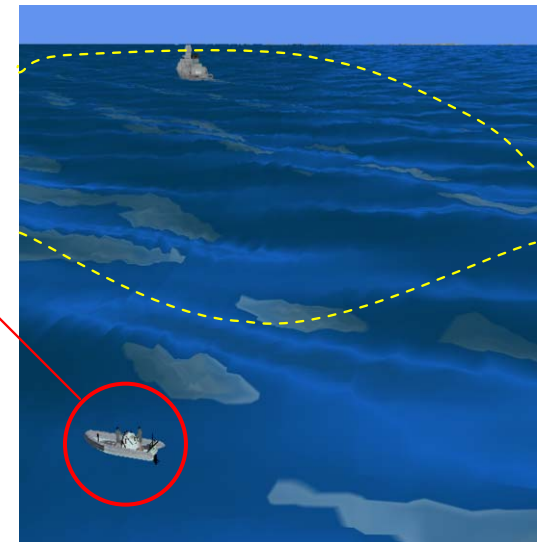
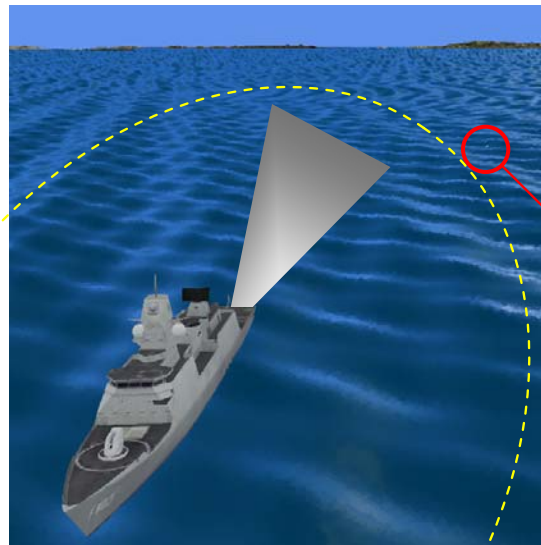
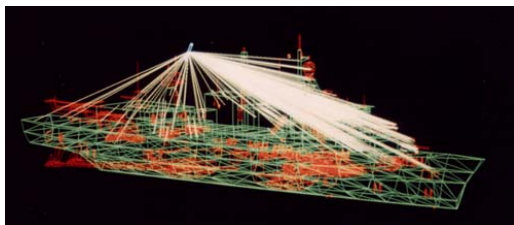
What is TNO?

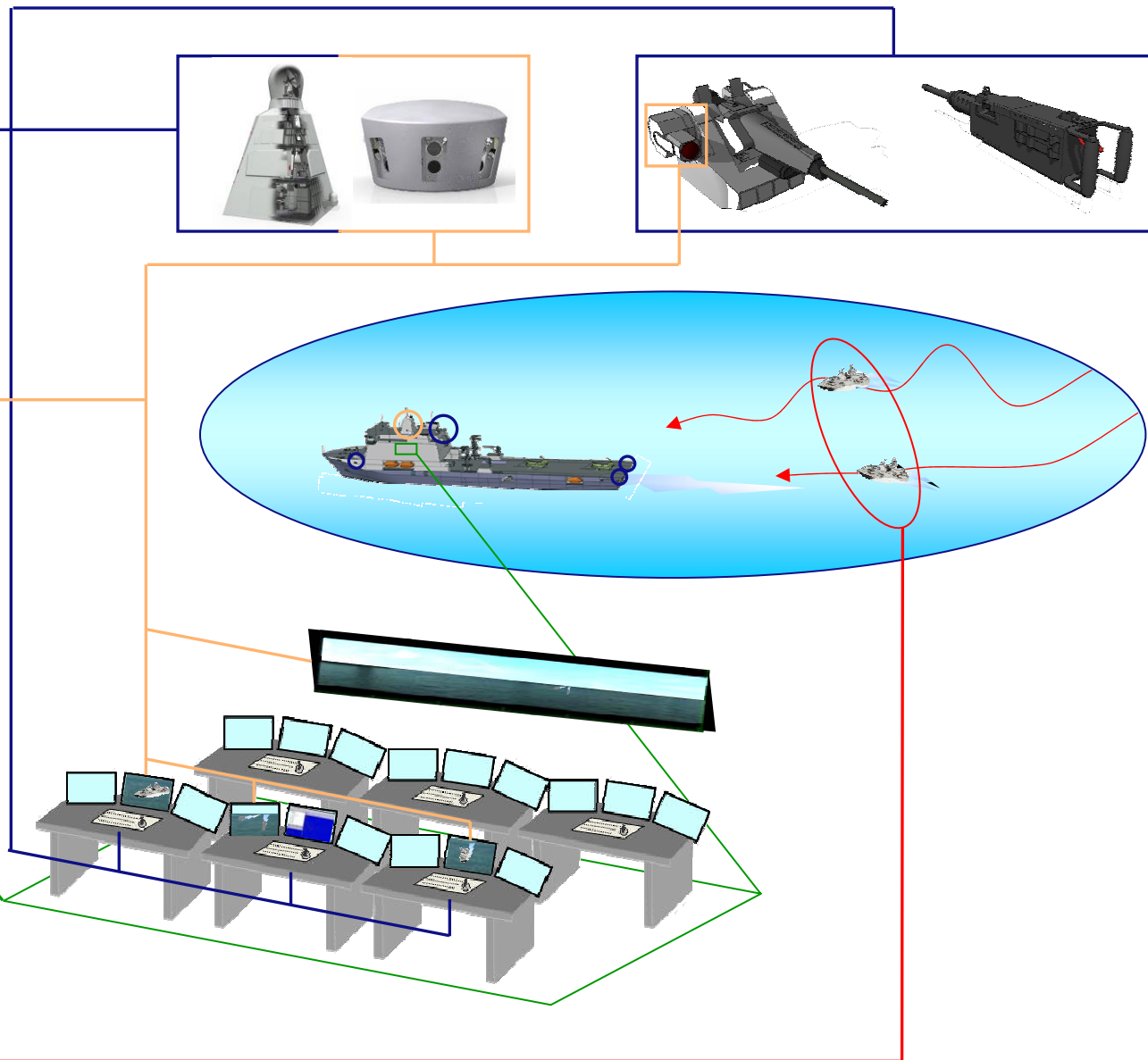
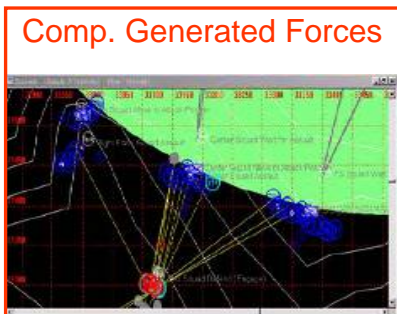
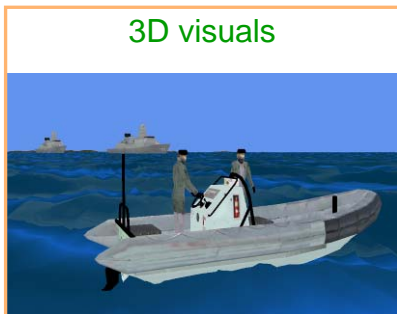
- Netherlands Organisation for Applied Scientific Research
- Non for profit
- 4500 personnel of which 1000 Defence related
- Research for government and industry



What is Modelling & Simulation?

- System models (sensors, weapons, platforms, visuals)
- Operator in the loop simulation
- Scenarios and variations
 - Threat intensity
 - Work load
 - Visibility
 - Sea state
- Cheaper
- Safer

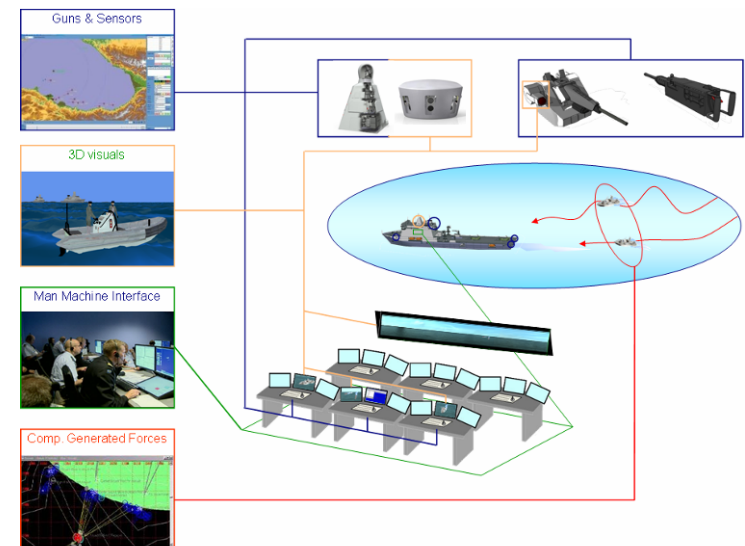




Current activity: Counter Piracy support for Royal Netherlands Navy

Track record

- Air defence exercise support (JPOW)
- Royal Netherlands Navy patrol vessel
- Surface surveillance requirements and tactics
- Small calibre gun system analysis
- APAR & SMART-L analysis for MTMD
- MTDM coalition testbedding
- NEC experiments
- JCOP requirements
- Manning aspects ops rooms



How can M&S help you?

Acquisition support

- What type of UAV?
- What type of Non Lethal Weapons?
- Determine implications on Doctrine, C2, Organisation, Personnel

Mission preparation

- Practice and develop TTPs
- ROE ambiguity
- Virtual assisted table top exercises
- Mission rehearsal and training

Mission support & evaluation

- Support mission daily planning
- After action review (recording and replay)



Questions?

Patrick Keyzer
Business Developer Maritime Operations
TNO Defence, Security & Safety

patrick.keyzer@tno.nl
+31 70 374 0180
www.tno.nl

