Remote Controlled Weapon Systems

› Research on new concept self defense

Agenda

❯ Introduction to Holland Class OPV and JSS

❯ Introduction to Remote Control Weapon Systems

❯ Research

   ❯ Goals

   ❯ Assumptions

   ❯ Modeling

   ❯ Output

2014:

Hr Ms Holland Class (2) and Joint Support Ship (1) entered service

- 3750 ton
- 108 m
- 50 crew
- Maritime presence/interdiction
  Defence against piracy and
  other constabulary tasks
  etc.

- 27000 ton
- 205 m
- 152 crew
- Replenishment at sea
  Transport capacity
  Sea Basing
  etc.

AWW weapon and sensor systems

- 2x Hitrole 12.7mm
- 1x Marlin 30 mm
- 1x Oto melara 76 mm
- Integrated sensor mast
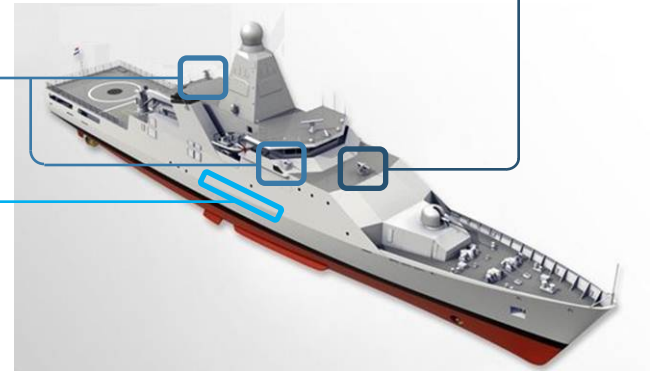 - Gatekeeper
  - Seastar
  - Smile

- 4x Hitrole 12.7mm
- 2x Marlin 30 mm
- 2x Goalkeeper CIWS
- Integrated sensor mast
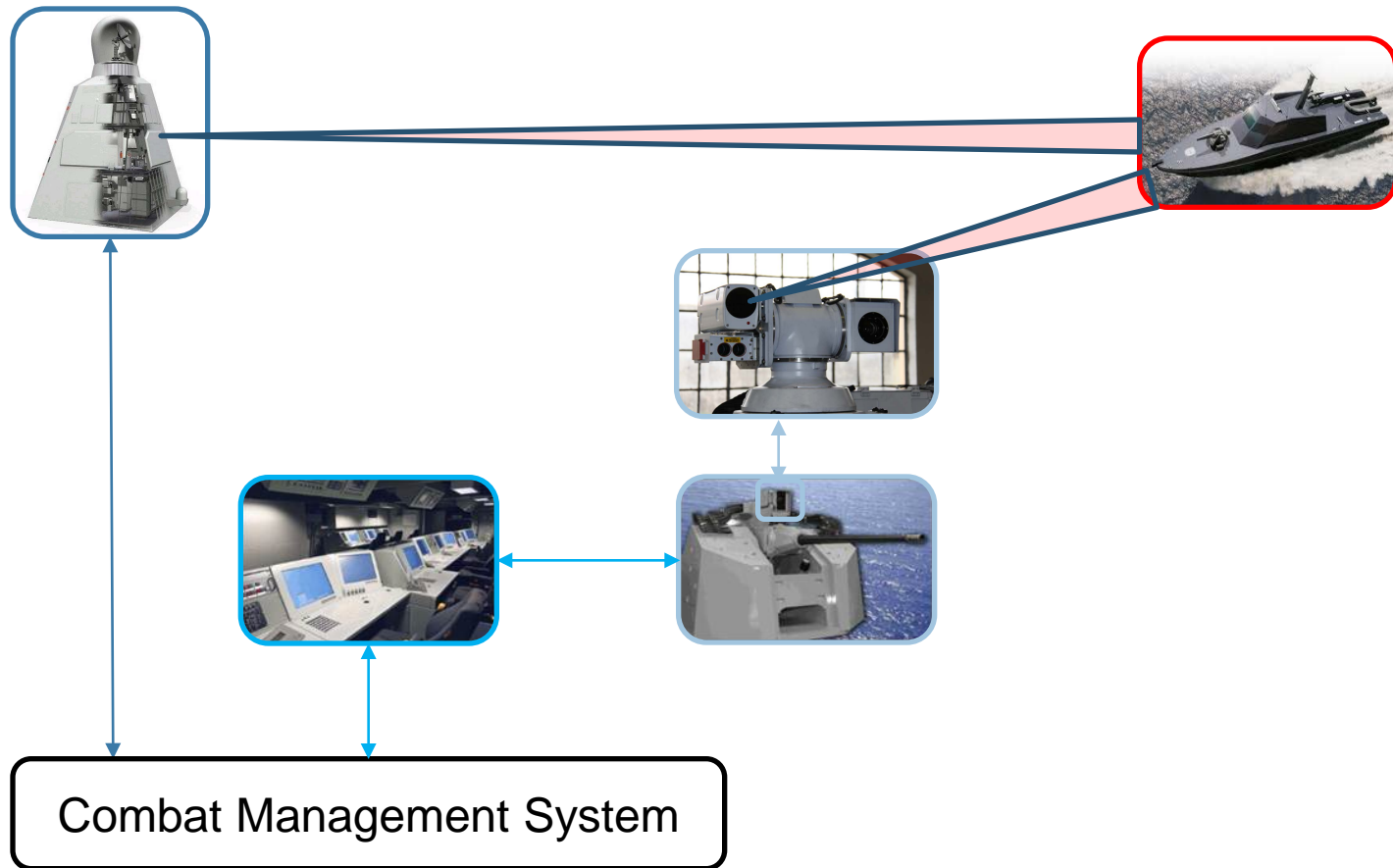 - Gatekeeper
  - Seastar
  - Smile

Remote Controlled Weapon Systems

› Oto Melara

  › Marlin 30 mm

  › Hitrole 12.7 mm

› No personnel on deck

› Controlled from
  Command Information Centre

Remote Controlled Systems

Combat Management System

Console for remote system

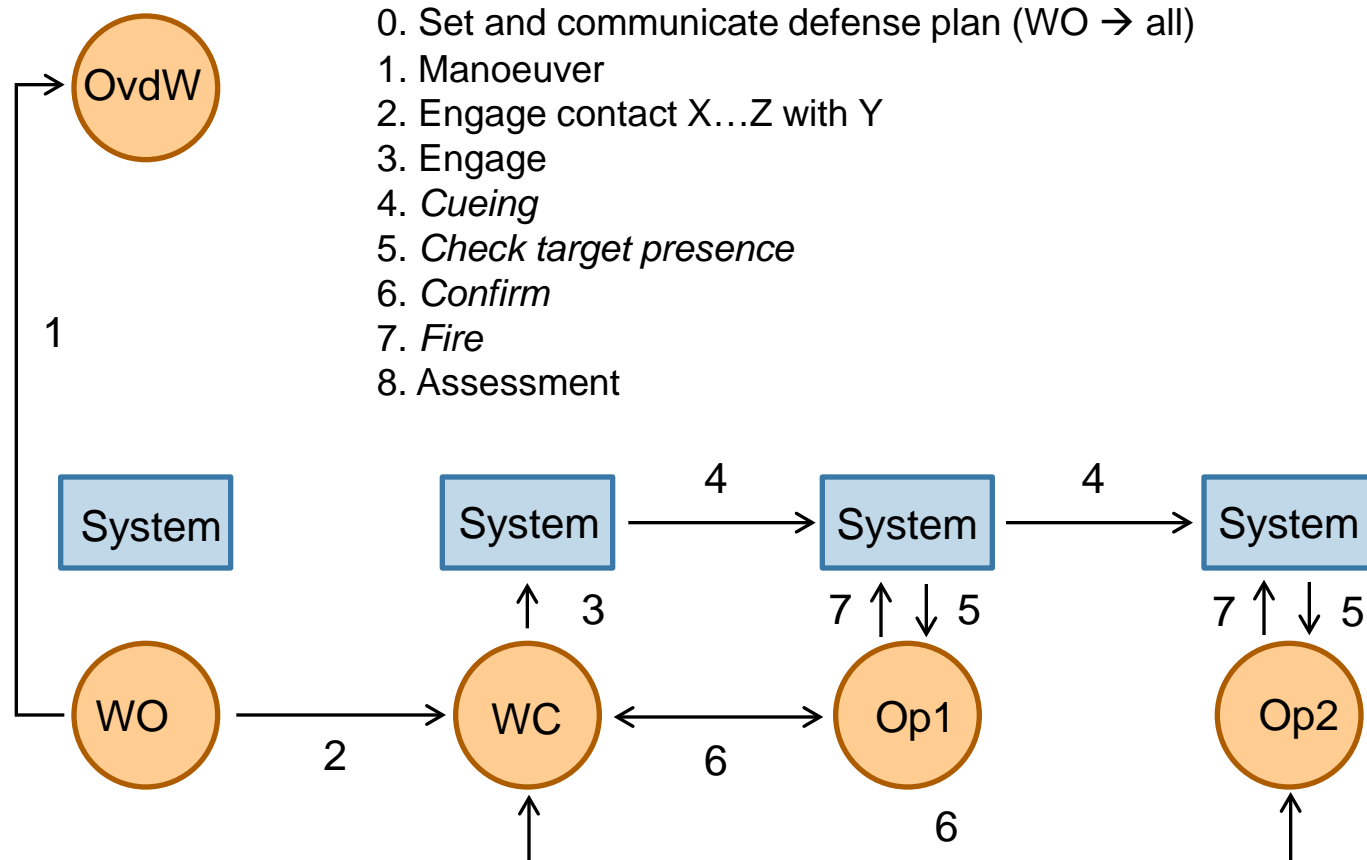› EO/IR sensor

› Laser Range Finder

› Tracking information

› System information

Research Goals

> Give insight to self defense capability of OPV & JSS with new RCWS

> Advise on tactical guidelines for RCWS deployment
as a preparation for doctrine development

> Advise on control of RCWS from Command Information Centre

> Advise on division of tasks between Fire controller and gun operator

Possible Task division within CIC

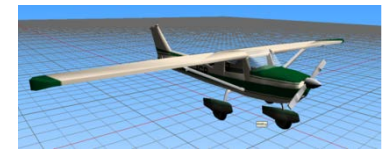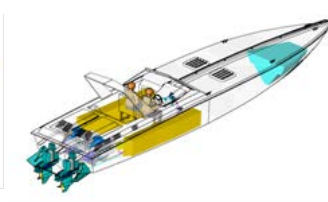Steps to take when countering multiple hostiles

0. Set and communicate defense plan (WO → all)
1. Manoeuver
2. Engage contact X…Z with Y
3. Engage
4. *Cueing*
5. *Check target presence*
6. *Confirm*
7. *Fire*
8. Assessment

Assumptions

❯ Identification and Classification is not under investigation
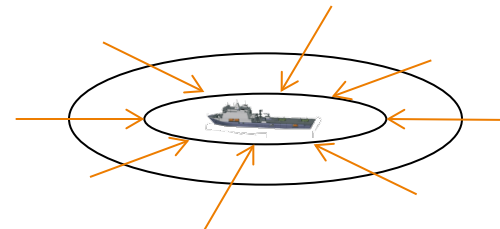
❯ Ship and Crew at 100%

❯ Threat
  ❯ Types:

  ❯ Number: as much as possible
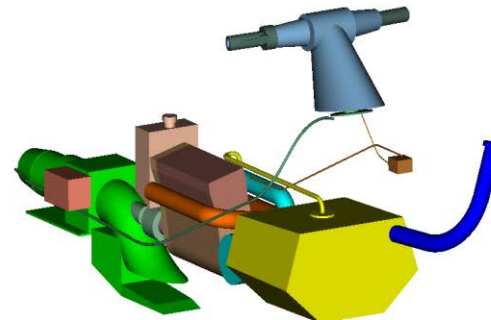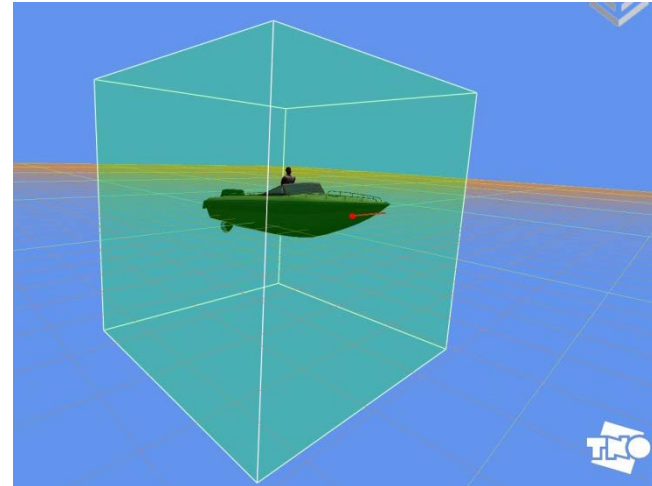
  ❯ Directions: omnidirectional

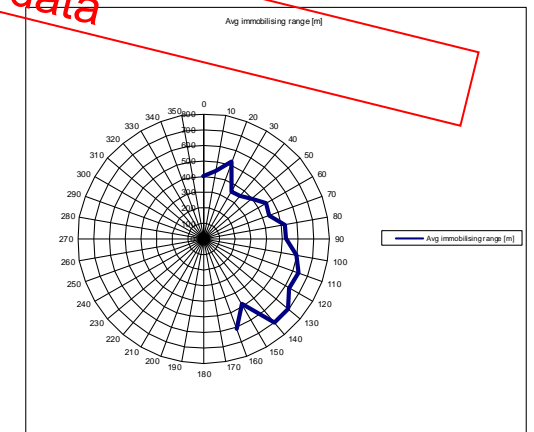# Modeling: parameterized ships and systems
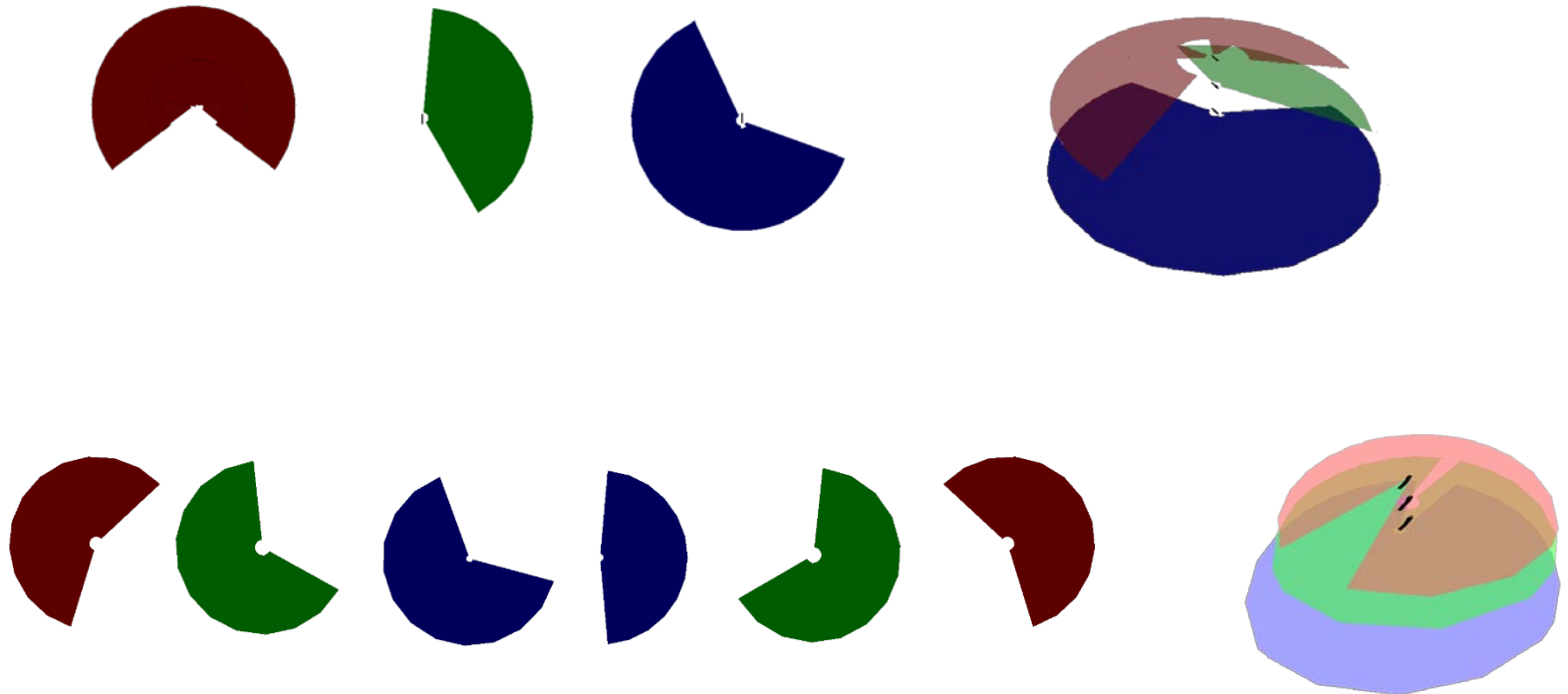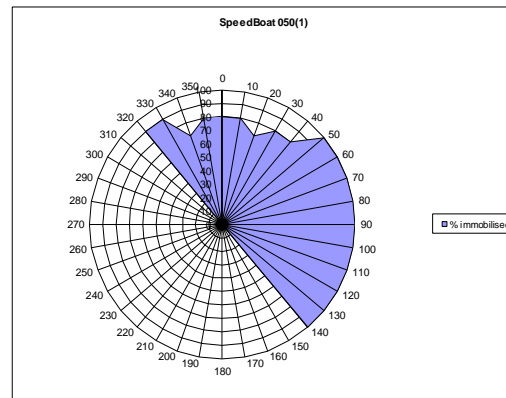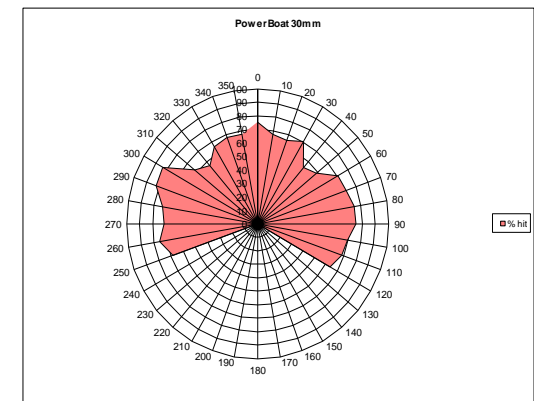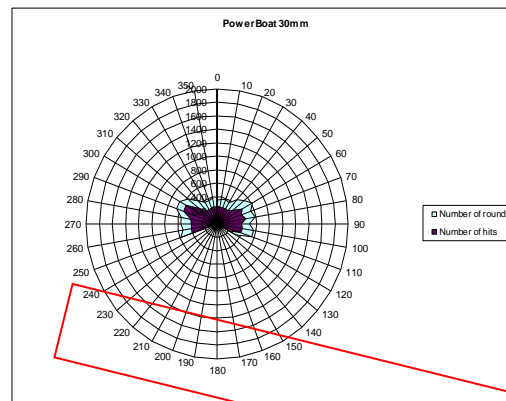
Modeling: synthetic environment

Output: Monte Carlo Analysis

Output Data:

> Ammo Fired

> Ammo Hit

> Mobility Kill

> Catastrophic Kill

> (Which Part)

> Ranges

> Numbers

> Percentages

Modeling: synthetic environment
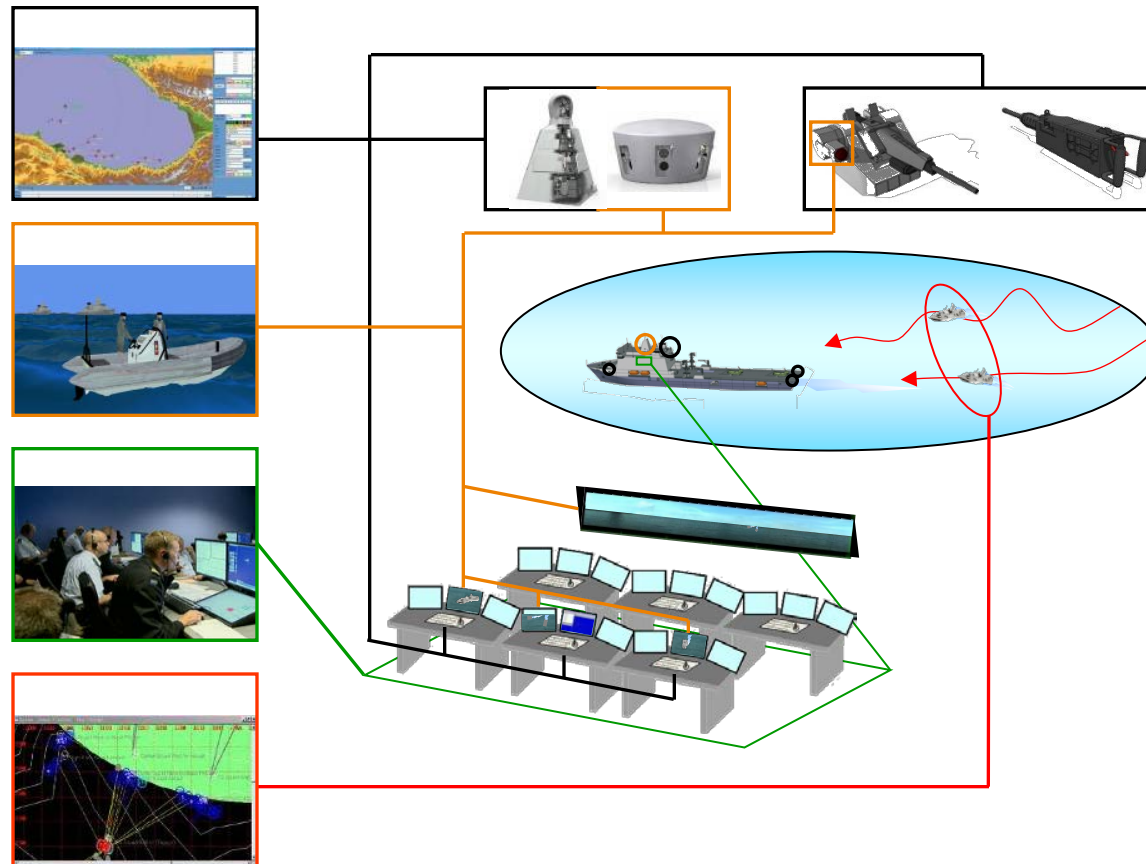
Output: Crew in the Loop Experiments

Possible research

- Concept testing (e.g. manning, process, interface)
- System integration
- Firing doctrines
- Ship self defense performance
- Advise on tactical control and guidelines

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