SAFEGUARD

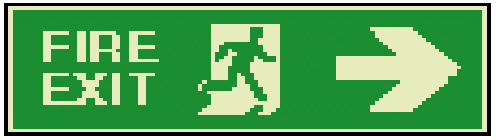
Dr Philipp Lohrmann

FP7 Maritime Transport Brokerage Event
1st and 2nd September 2010
London, UK

Behind the project

- **Previous work conducted during FP5 in the FIREEXIT project**
  - September 2002 to August 2005

- **Main aim to develop a Ship Evacuation Simulator for the Maritime Industry capable of addressing issues of**
  - Mustering
  - Ship motions
  - Fire and abandonment



SAFEGUARD receives funding from the EC FP7 Sustainable Surface Transport Programme

Behind the project

- **FIRE EXIT identified that many of the original assumptions in MSC Circ. 1033 needed revision (e.g. passenger response time distribution)**
- **Revision led to MSC Circ. 1238 which incorporated new response time distributions as identified from the analysis of FIRE EXIT data**
- **FIRE EXIT results were very valuable BUT:**
  - Only one ship was examined
  - Only two trials were conducted
  - No data was collected on assembly
  - Trials were announced and passengers were repeatedly warned

SAFEGUARD receives funding from the EC FP7 Sustainable Surface Transport Programme

Call for more data

- **As part of modifications to MSC Circ 1033 the IMO Fire Protection Sub-Committee invited member governments to provide**

"…further information on additional scenarios for evacuation analysis and full scale data to be used for validation and calibration purposes of the draft revised interim guideline."

SAFEGUARD receives funding from the EC FP7 Sustainable Surface Transport Programme

SAFEGUARD

- **Aims to address the IMO requirement by:**
  - Collecting full-scale data for calibration and validation of ship-based evacuation models
  - Proposing and investigating additional benchmark scenarios to be used in certification analysis.
- **Three year targeted research project**
- **Total budget of 3.5M€ and funding from EC of 2.1M€**

SAFEGUARD receives funding from the EC FP7 Sustainable Surface Transport Programme

Partners:

SAFEGUARD

Safety at Sea
Safety Through Innovation

the UNIVERSITY of GREENWICH

PRINCIPIA

MI
ISO 9001
REGISTERED

BMT Group

BUREAU VERITAS

RoyalCaribbean INTERNATIONAL

Color Line

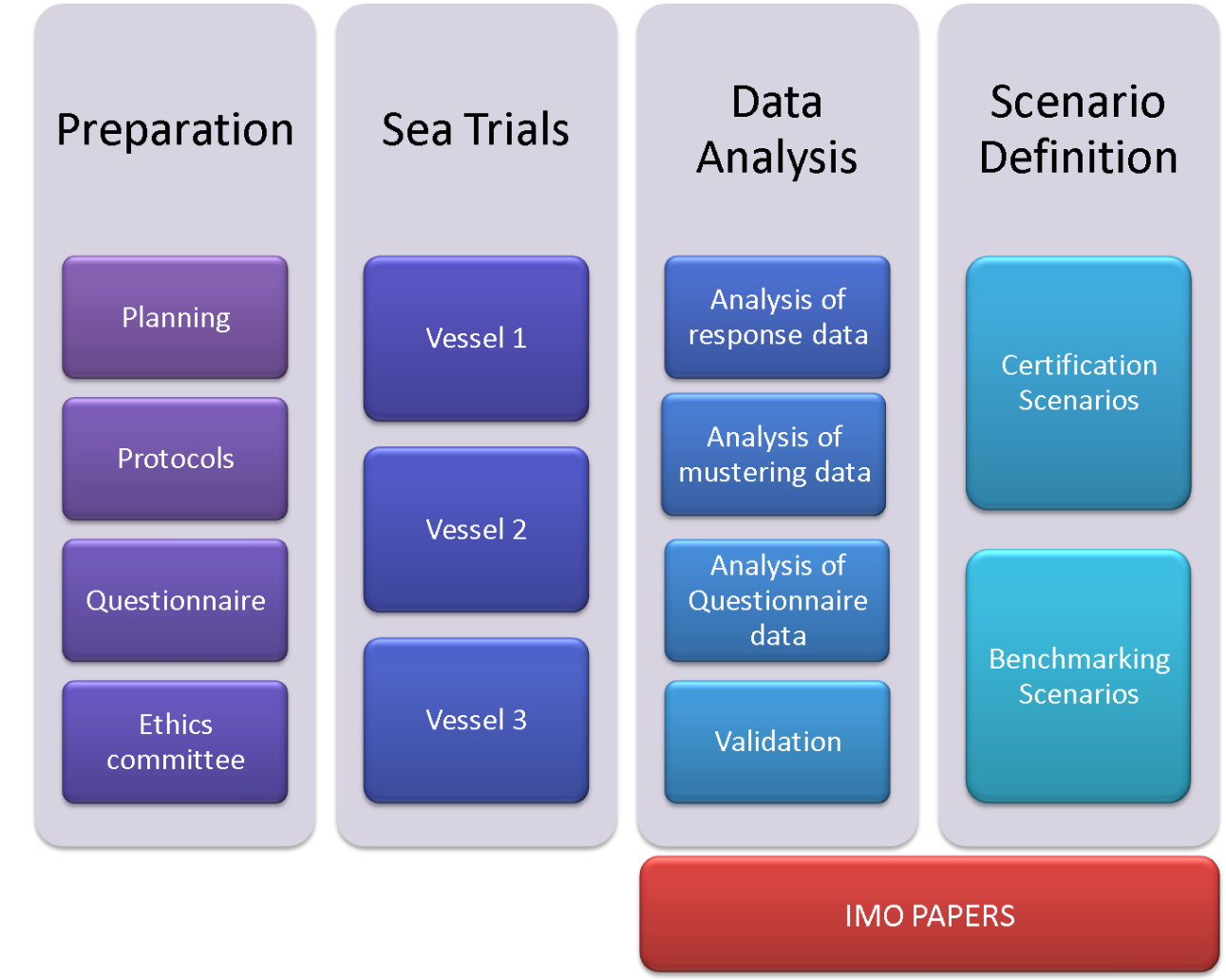
MINOAN LINES

Expected Outputs:

- **6 full-scale ship trials covering 3 vessel types (cruise ships, ferries with berths and ferries without berths), involving about 9,000 people in total.**
- **6 data sets to define passenger response time distributions (using video analysis)**
- **6 data sets for evacuation model validation – monitor passenger movement using a novel infrared position logging system**
- **A set of more representative benchmark scenarios to be used for evacuation certification; incorporation of fire (visibility due to smoke in the range 4 to 20m), and angles of heel up to 20^{o}.**
- **3 information papers to be sent to the Fire Protection Sub Committee of IMO detailing the findings of the project, covering:**
  - Passenger response time distributions,
  - Ship evacuation validation data and associated safety factors,
  - Ship evacuation certification benchmark scenarios.
- **A novel technology to track passengers' paths through the vessel.**

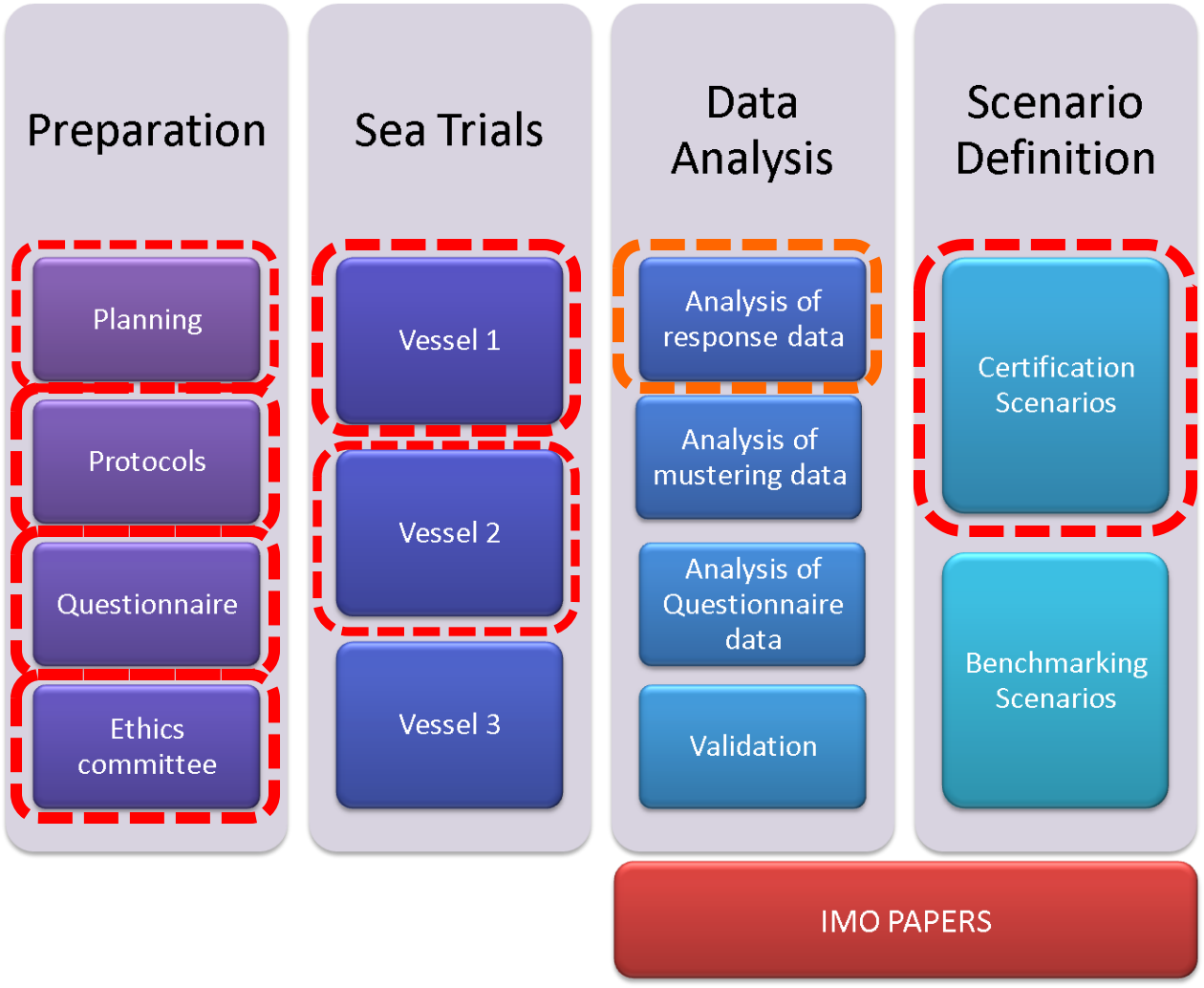
SAFEGUARD receives funding from the EC FP7 Sustainable Surface Transport Programme

Project Structure



SAFEGUARD receives funding from the EC FP7 Sustainable Surface Transport Programme

Project Status



SAFEGUARD receives funding from the EC FP7 Sustainable Surface Transport Programme

Status

- 1st Sea trials carried out 4th /5th September 09
- Kristiansand, Norway to Hirtshals, Denmark on Color Line RO-passenger ferry 'Superspeed 1'
- Total of 902 passengers day 1 and 867 on day 2. All passengers over the age of 12 were invited to participate and in total data was 1769 tags and 1534 questionnaires returned.

SAFEGUARD receives funding from the EC FP7 Sustainable Surface Transport Programme

Status

- **Trial 1 response time analysis completed**
  - Analysis of video data ongoing

- **D1.1 Accident Analysis report has been produced by Bureau Veritas investigating causes of accidents on vessels and feeds into the Enriched Day and Night Scenarios and the Heel and Fire Scenarios being investigated in the project.**

SAFEGUARD receives funding from the EC FP7 Sustainable Surface Transport Programme

Status

- **2nd Sea trial carried out on the 31st July 2010 onboard the Royal Caribbean cruise ship 'Jewel of the Seas' between UK and Copenhagen.**

SAFEGUARD receives funding from the EC FP7 Sustainable Surface Transport Programme

Immediate plans

- **3rd trial planned for 2011**
  - Minoan ‘Olympia Palace’ departing from Venice, Italy

SAFEGUARD receives funding from the EC FP7 Sustainable Surface Transport Programme

www.safeguardproject.info