

Identification of the technical systems in the VTM concept

The VTS Committee at its 25th session provisionally identified (technical) systems components (VTS25-output-14) for the e-navigation concept. With the recognition in IMOV54 that e-navigation is supportive to VTM the document was reviewed, made consistent for VTM by the intersessional VTM Drafting Group and confirmed at VTS28 (September 2008) by Working Group 4 (Vessel Traffic Management).

Purpose of the identification of the technical systems in VTM

Purpose of this document (in combination with other documents to be presented, e.g. VTS28/WG/WP01 "Identification of Stakeholders in VTM") is to give guidance and/or support to

- further development of the scope and concept of VTM
- the development of e-navigation
- the development of a the functionalities of a high level data and technical architecture for VTM
- other relevant developments in IALA and other (inter)national bodies

Structure of the document

To improve the accessibility and consistency the identified systems have been categorized taken in account the

- *type of systems*
 - Communications systems (sensor or network systems)
 - Monitoring / Navigation systems (sensor systems)
 - Navigation systems (satellite and terrestrial systems)
 - Presentation systems
 - Information systems (maritime data and administrative systems)
 - Additional information systems
 - Storage systems
- *use for interaction*
 - the interaction between ships and shore
 - the interaction between shore and shore (VTM to other parties within the own area of the Competent Authority¹)
 - the interaction between shore and shore (VTM to other parties outside the own area of the Competent Authority¹)
 - the interaction between and within the VTM organizations/departments

Note: High level identification, no applications yet defined.

Provisional List

The list reflected below is not a comprehensive list of the foreseen (technical) systems in VTM.

Due to technical developments the list may increase, decrease or might have to be modified.

The list should be kept under review during the development process of VTM by the VTS Committee with support of the e-Navigation Committee and other committees.

¹ Area of a Competent Authority: here a defined area under the responsibility of a Competent Authority where one or more shore based operational centres are located (e.g. a VTS area) from where VTM is operated. Not only for interaction with shipping, but in this case with other shore based stakeholders (both Shore 1 and Shore 2 see doc VTS28/WG4/WP01).

The interaction between ships and shore

- **Communications (sensor systems)²** :
 - o VHF, MF and HF voice communications³
 - o NAVTEX
 - o AIS⁴
 - o LRIT⁵

- **Communications (network systems)⁵**
 - o Satellite communications (Inmarsat > GMDSS)
 - o Broadband networks (GSM, GPRS, UMTS)

- **Monitoring traffic / Navigation (sensor systems)⁶**
 - o Radar
 - o AIS⁷
 - o LRIT⁸
 - o CCTV
 - o VHF DF

- **Navigation systems⁹**
 - o GNSS and terrestrial navigation systems (incl. availability monitoring)
 - o Marginal Ships Navigator (Portable Pilot Unit)
 - o Traditional Aids to Navigation
 - o Virtual Aids to Navigation

- **Presentation systems¹⁰**
 - o ECS/ENC/ECDIS
 - o Visual (ECS)
 - o Assisted docking

- **Information systems / networks**
 - o Compatible strategic, tactical and operational information systems (data storage and exchange)

- **Additional information systems¹¹**
 - o Meteo and Hydro sensors (e.g., weather conditions, ice, fog, tidal)

- **Storage systems**
 - o Voice and data recording (incl. images)

² equal to e-Navigation

³ depending on geographical circumstances, area of responsibility, to be decided by CA

⁴ here set as a communication tool (which AIS and LRIT in essence are, data provided by onboard info sources)

⁵ equal to e-Navigation

⁶ equal to e-Navigation

⁷ here set as a monitoring tool (data exchanged through AIS can be fused with other data to establish traffic image)

⁸ here set as a monitoring tool (data exchanged through LRIT can be fused with other data to establish traffic image)

⁹ equal to e-Navigation

¹⁰ equal to e-Navigation

¹¹ equal to e-Navigation

The interaction between shore and shore (VTM to other parties within the own area CA)

- **Communications (sensor systems)**
 - o VHF, MF and HF voice communications¹²
- **Communications (network systems)**
 - o A public and internal telephone network (incl. fax)
 - o Broadband networks (GSM, GPRS, UMTS, WIFI)
 - o Internet
- **Information systems / networks**
 - o Compatible strategic, tactical and operational information systems (data storage and exchange)
 - o Compatible administrative information systems
- **Presentation systems**
 - o ECS/ENC/ECDIS
 - o Visual (ECS)
 - o Assisted docking

The interaction between shore and shore (VTM to other parties outside the own area CA)

- **Communications (network systems)**
 - o A public telephone network (incl. fax)
 - o Broadband networks (GSM, GPRS, UMTS, WIFI)
 - o Internet
- **Information systems / networks**
 - o Compatible strategic, tactical and operational information systems (data storage and exchange)
 - o Compatible administrative information systems

The interaction between and within the VTM organizations/departments

- **Communications (network systems)**
 - o A public and internal telephone network (incl. fax)
 - o Broadband networks (GSM, GPRS, UMTS)
 - o Internet
- **Information systems**
 - o Compatible strategic, tactical and operational information systems (data storage and exchange)
 - o Compatible administrative information systems
- **Information systems**
 - o ECS/ENC/ECDIS
 - o Visual (ECS)

¹² depending on geographical circumstances, area of responsibility, to be decided by CA