

# SMART-Navigation:

an e-Navigation project focusing on non-SOLAS ships as well as SOLAS ships

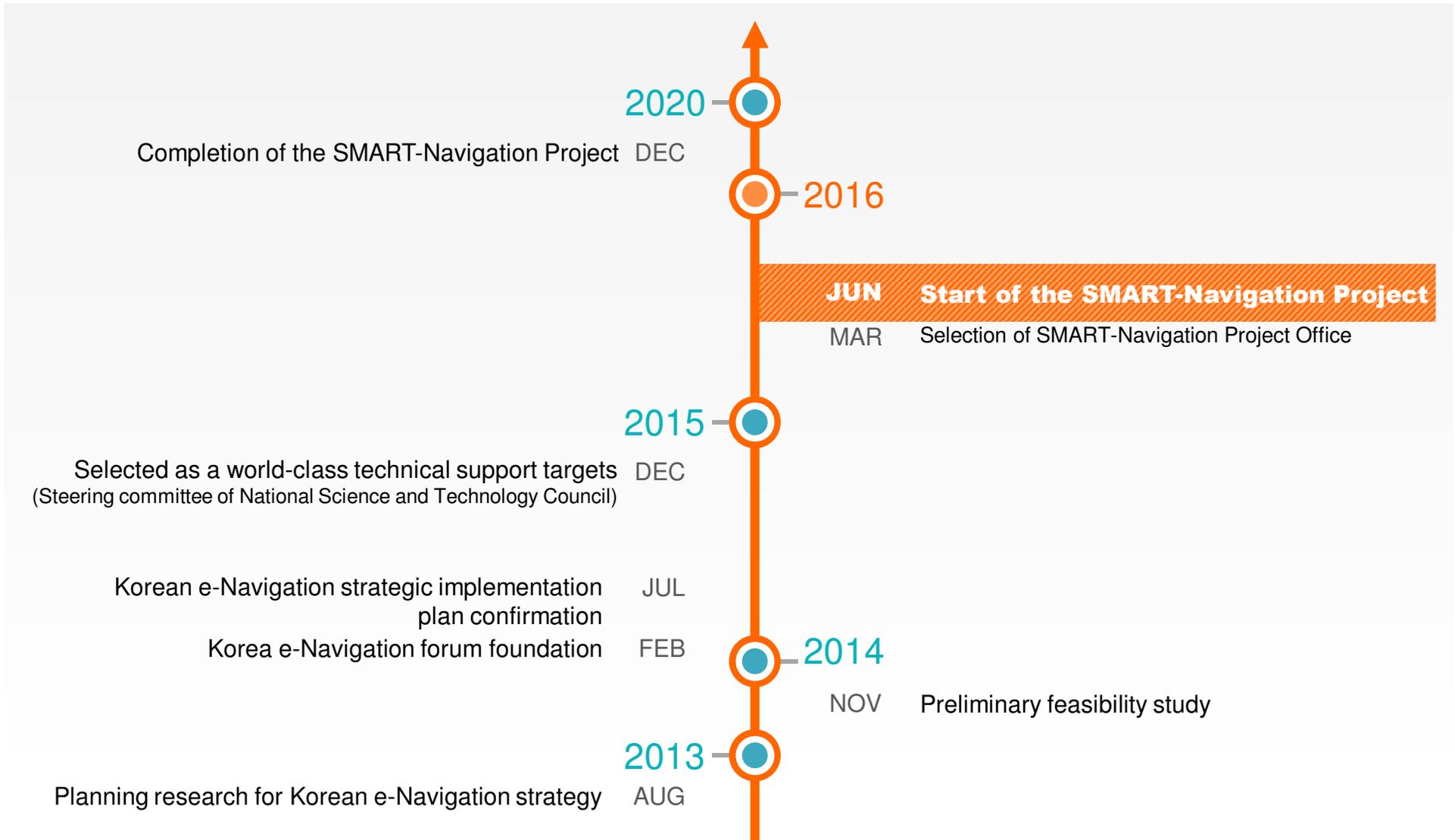


01 February, 2017

SMART-Navigation Project Office  
Han Jin Lee

  
WIDER CONNECTION SAFER NAVIGATION

# 01 Introduction of SMART-Navigation Project



By contribution to the introduction of IMO e-Navigation  
**Securing Maritime Safety and Leading Related Technologies**

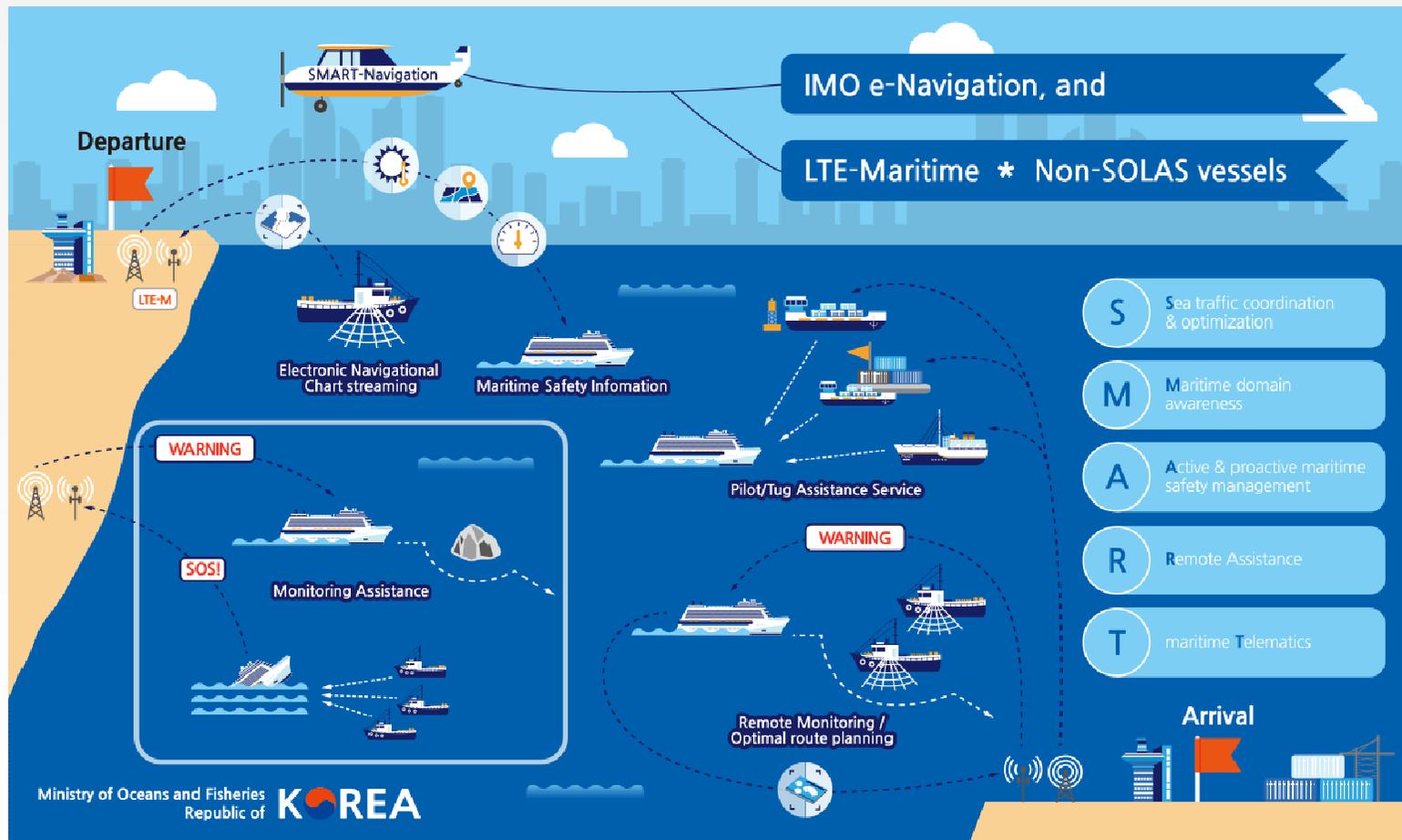


Back ground	Total marine accidents caused by fishing boats and small ships	72%
	Accidents due to human factors	82%

Solution

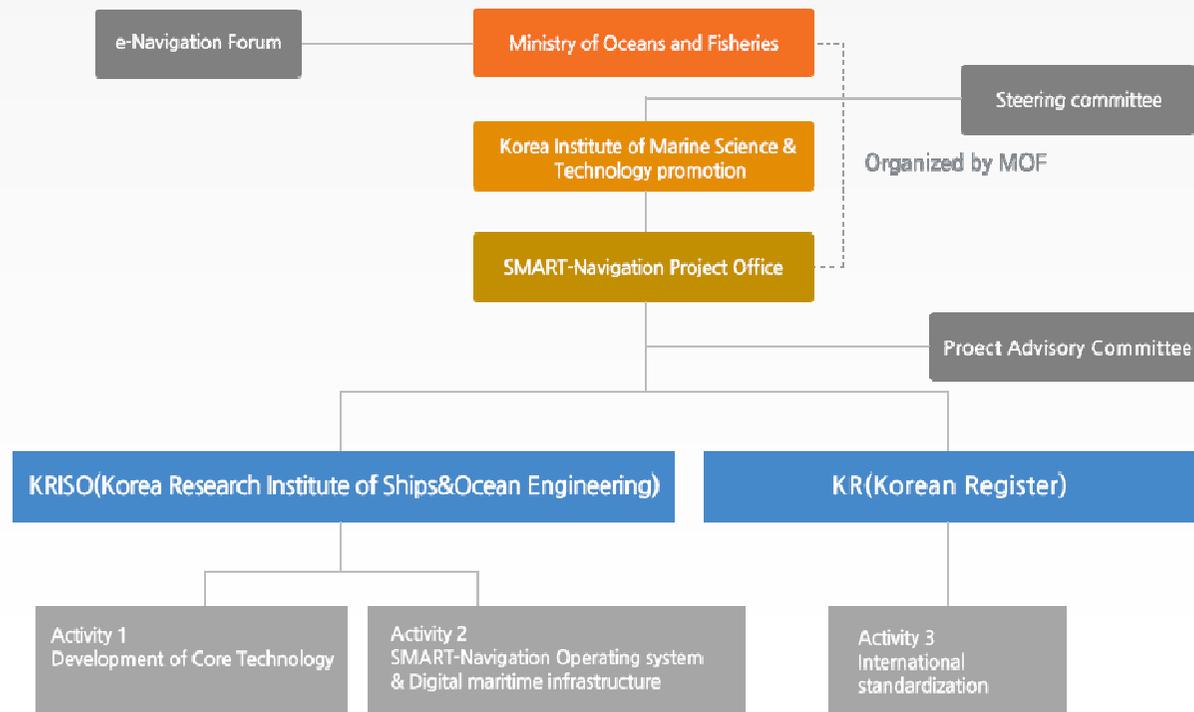


# 01 Introduction of SMART-Navigation Project

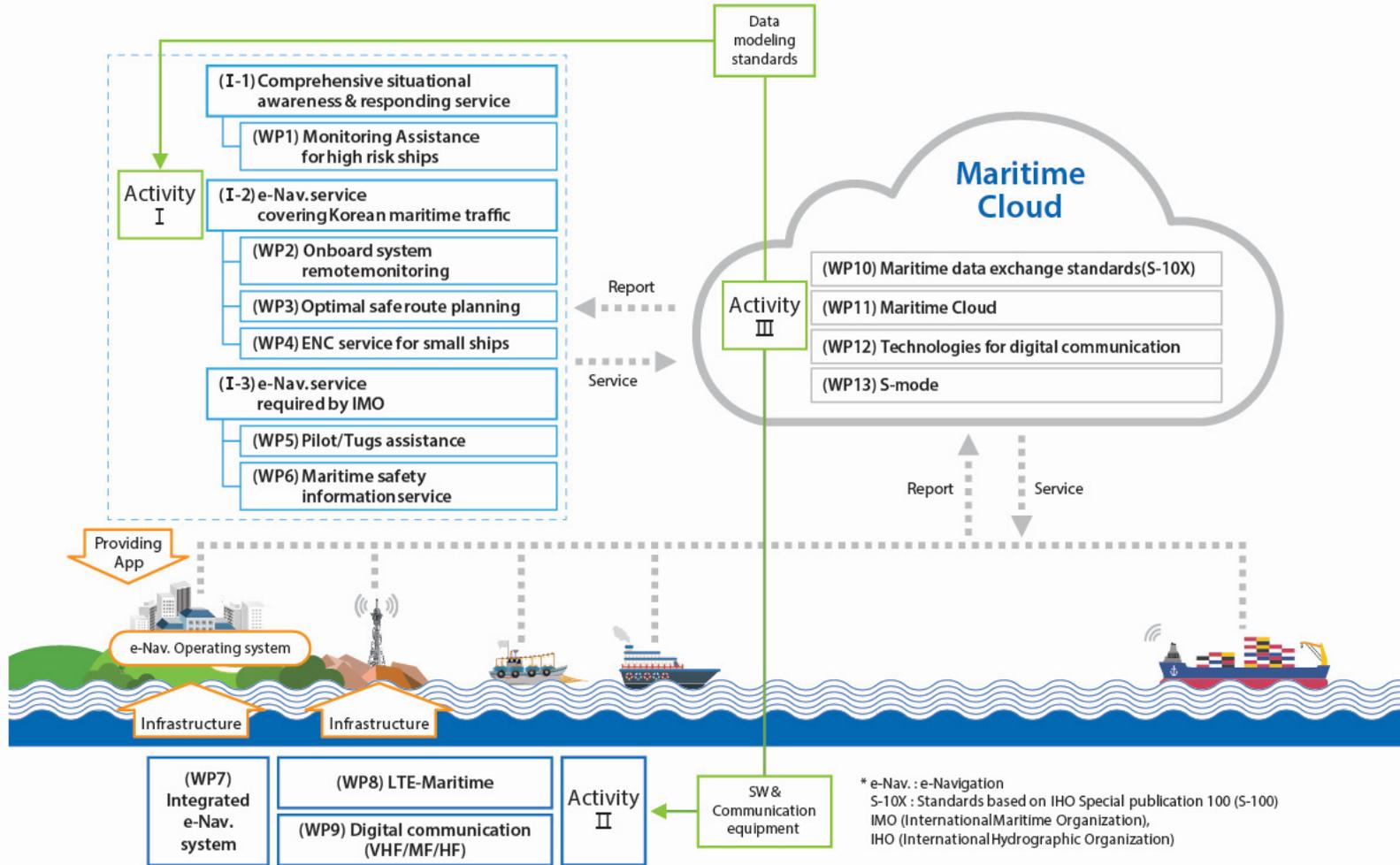


# 01 Introduction of SMART-Navigation Project

<b>Project name</b>	<b>SMART-Navigation Project</b>
<b>Budget</b>	<b>About USD 110M</b>
<b>Period</b>	<b>March 2016 ~ December 2020</b>

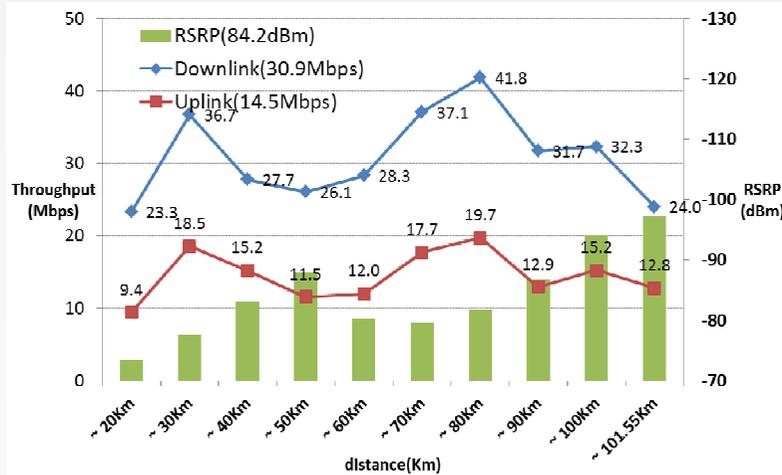


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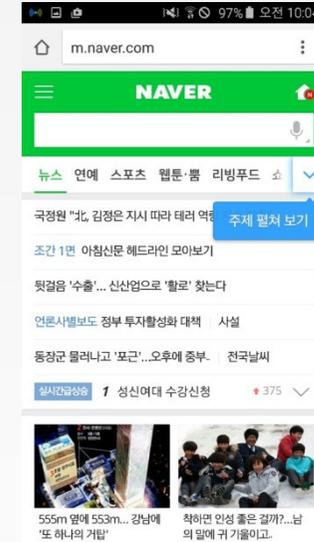
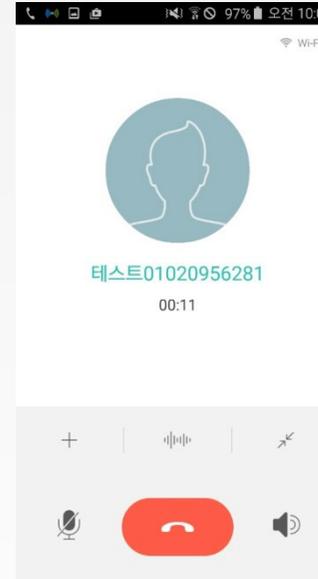
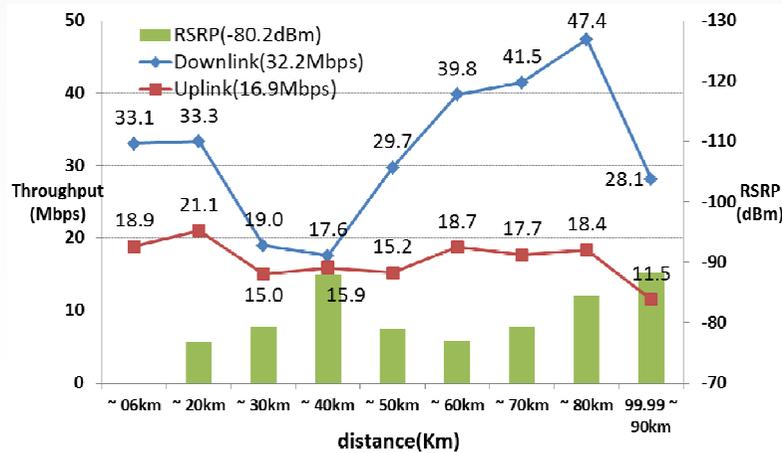


# 02 Construction of LTE-Maritime

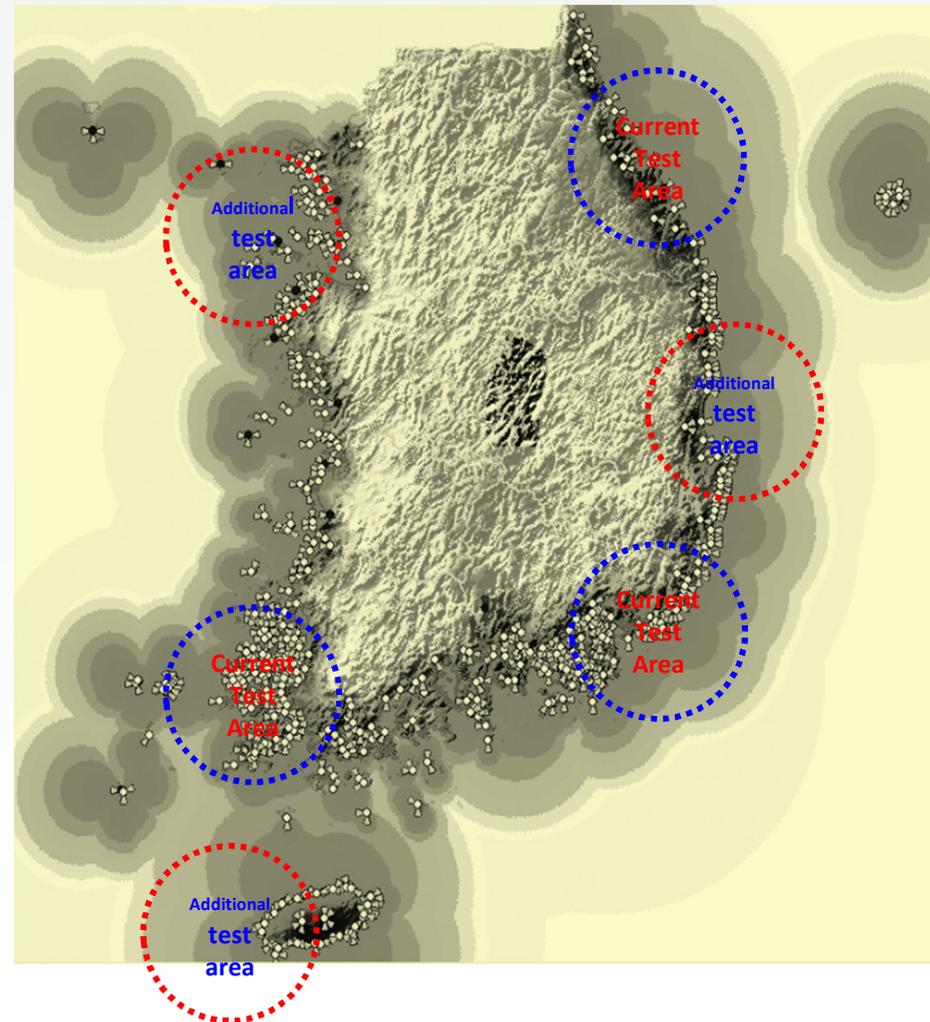
16.02.14



16.02.18



- Pilot construction of LTE-Maritime
  - Verifying radio wave characteristics and its coverage on each sea areas
  - Verifying the influence of tidal level
  - Test to reduce radio shadow areas by islands and other factors
  - Test to remove the interference with other networks
  - Test to reduce spill over into neighboring countries



# 02 Construction of LTE-Maritime

Wahyun, Geoje city



Mt. Bulmo, Gimhae city

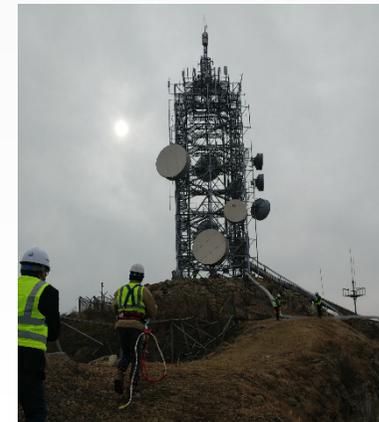


Mt. Daedun, Mokpo city



Construction

LTE antenna installation



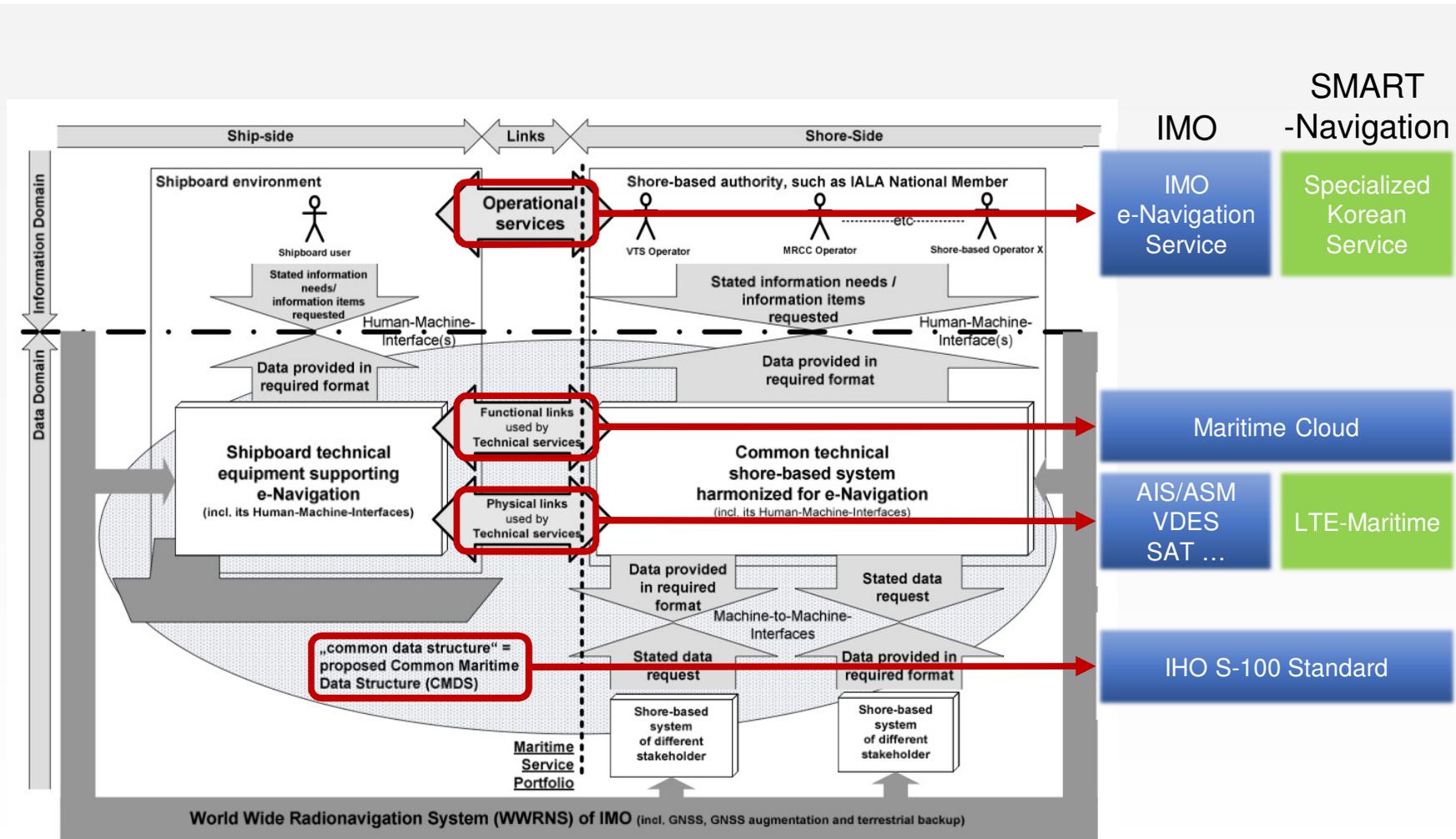
# 03 SMART-Navigation Services

ID	Service	Dedicated user/ship	Physical Link
Svc.1	Monitoring assistance for high risk ships	<ul style="list-style-type: none"> <li>High risk ships</li> </ul>	LTE-M VDES
Svc.2	Remote monitoring on system onboard for high risk ships	<ul style="list-style-type: none"> <li>Passenger ships with Korean Flag (International/Domestic)</li> <li>Ships requiring the service</li> </ul>	LTE-M VDES, etc
Svc.3	Optimal routes planning for high risk ships	<ul style="list-style-type: none"> <li>Passenger ships with Korean Flag (International/Domestic)</li> <li>Ships requiring the service</li> </ul>	LTE-M VDES, etc
Svc.4	Electronic Navigation Chart streaming for small vessels	<ul style="list-style-type: none"> <li>Non-SOLAS Ships</li> </ul>	LTE-M
Svc.5-1	Pilots/tugs assistance service	<ul style="list-style-type: none"> <li>Pilot</li> </ul>	LTE-M
Svc.5-2	Maritime safety information service (information on maritime safety, weather, route)	<ul style="list-style-type: none"> <li>Ships requiring the service</li> </ul>	LTE-M VDES, etc

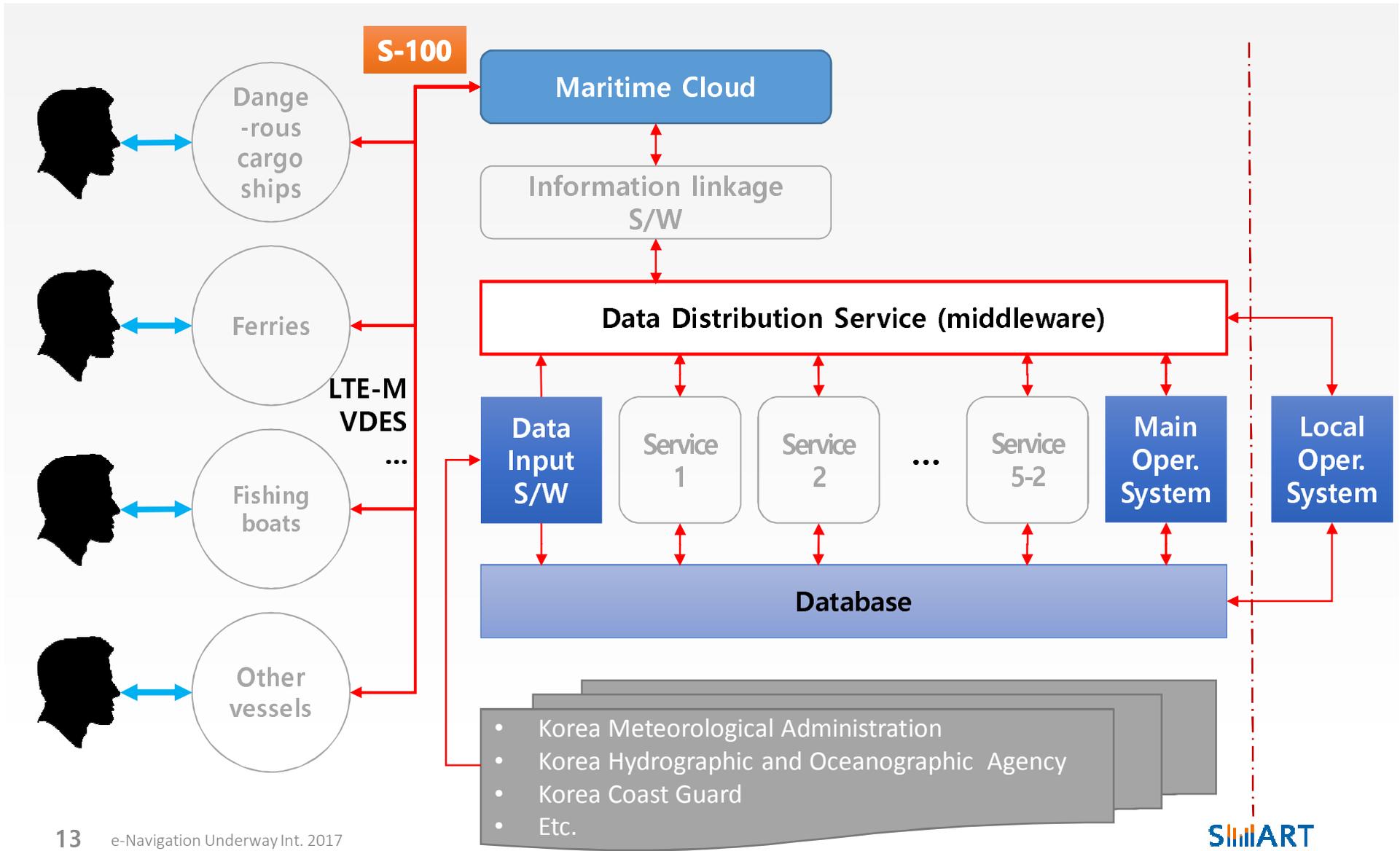
# 03 SMART-Navigation Services

No	Identified Services	SMART
MSP 1	VTS Information Service (IS)	
MSP 2	Navigational Assistance Service (NAS)	Svc.1/ Svc.2/ Svc.3
MSP 3	Traffic Organization Service (TOS)	
MSP 4	Local Port Service (LPS)	
MSP 5	Maritime Safety Information Service (MSI)	Svc.5-2
MSP 6	Pilotage service	
MSP 7	Tugs Service	Svc.5-1
MSP 8	Vessel Shore Reporting	-
MSP 9	Telemedical Assistance Service (TMAS)	-
MSP 10	Maritime Assistance Service (MAS)	Svc.1/Svc.2
MSP 11	Nautical Chart Service	Svc.4
MSP 12	Nautical Publications Service	Svc.4/Svc.5-2
MSP 13	Ice Navigation Service	-
MSP 14	Meteorological Information Service	
MSP 15	Real-time Hydrographic and Environmental Information Service	Svc.5-2
MSP 16	Search and Rescue Service	-

# 04 International Standards of e-Navigation



Ref.: IMO NCSR 1/28 Annex 7





# THANK YOU



 SMART

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Ministry of Oceans  
and Fisheries