

List of Challenges

GALATEA Main Domain	Sub-domain	#	Challenge	Objective for applicants
Smart Port	Energy	1	Development of clean energy sources	To contribute to the implementation of clean energies and their different aspects to the port. Clean energy corresponds to energy consumption with zero or limited CO2 emissions and includes the different uses of energy in ports activities: when docked and for port infrastructures. Solutions increasing the clean energy rate in ports activities and improving the management of energy flows will also be taken into account
	Logistics	2	Improvement of flow management	To allow ports to improve their activities and enhance productivity regarding flow management (people, goods and information). The solution should allow a better overview and management of port activities.
		3	Development of security in the port	To propose effective solutions for ports to mitigate the risk of notably human injuries, theft, degradation of merchandise or to improve port security during passengers boarding.
	Environment	4	Optimisation of ressources consumption	To assess the use of ressources in ports and to develop innovative ways to reduce waste. A particular emphasis will be put on water preservation.
		5	Elimination and recycling of waste and wastewater	To propose efficient monitoring tools and solutions to eliminate the waste and wastewater. A particular emphasis will be put on the implementation of a circular economy model.
		6	Protection of natural ressources	To propose efficient monitoring tools (e.g. Carbon or Water footprints, energy consumption, etc) to evaluate, analyse and mitigate the impact ports' activities have on water, biodiversity and environment in a general way. (Notably visual and noise pollution,



				environmental pollution, increase of water stress).
	Digitalisation	7	Digitalisation of the port	To develop solutions allowing ports to develop further their digitalisation in general. Solutions may tackle all aspects in relation with digitalisation, including security of data exchanges, flow management or development of intelligent platforms.
	Service development	8	Development of a digital service platform (for marinas)	To offer marinas a unique platform to serve as an interface with its clients - solutions proposing individual services that could be incorporated on such platforms will be considered as well.
		9	Optimisation of the water surface	To propose innovative solutions to allow ports to optimise their water surface management.
		10	Improvement of the links between the city and the port	To develop the inclusion of ports in the everyday life by developing links with its own environment (city, other ways of transportation, water networks, energy grids, etc.)
Smart Ship	Energy	11	Implementation of clean energy sources on board	To successfully implement clean energy (and its different aspects of implementation) on ships to reduce waste and CO2 emissions and to lower the pollution impact of marine traffic.
	Digitalisation	12	Development of a ship more autonomous	To develop innovative processes allowing the ship to be more autonomous in all its aspects (Navigation, control, communication, connectivity).
	Security	13	Improvement of the ship security	To propose innovative ways to secure the ship from physical and digital risks. In this context security concerns both on-board infrastructure as dematerialised data.
Smart Shipyard	Digitalisation	14	Development of remote and predictive maintenance	To propose digital products/services allowing predictive and/or remote maintenance of ships.



		15	Continuation of activities	To increase and optimise the exploitation of data all along the value chain for a better fluidity of operations.
	Environment	16	Revalorisation of waste and reuse of wastewater	To embed shipyards even more in the circular economy in proposing innovative ways to revalorise waste and wastewater. An emphasis will be put on plastic treatment.
	Manufacturing	17	Implementation of innovative materials	To implement new materials to the ship's structure to enhance its performances (strength, speed, manoeuvrability, etc.) and lower its environmental impact.
		18	Implementation of innovative manufacturing processes	To develop the use of innovative processes of fabrication to enhance the shipyard productivity and expertise. Technologies such as additive manufacturing/repair, digital twin or artificial intelligence will be particularly considered.
Maritime Surveillance	Digitalisation	19	Improvement of information transfer	To present effective ways to transfer information from the site of capture to the concerned user (authority, civil society, citizens) taking into account the European GDPR directives, in particular in matter of anonymization of data.
	Environment	20	Preservation of marine and maritime ecosystems	To contribute to the preservation of the marine and maritime ecosystems while developing products/services to monitor (from space, the air or the sea) the marine and maritime environment.
	Security	21	Detection of illegal activities	To propose monitoring product/services (from space, the air or the sea) aiming at unveiling illegal maritime activities (piracy, illegal fisheries) and allowing users to act efficiently in consequence.
		22	Improvement of search and rescue	To propose monitoring product/services (from space, the air or the sea) aiming at assisting authorities, or potential end-users to efficiently enhance their search and rescue activities.

GALATEA leaves a door open for project answering to additional Smart Port, Smart Ship, Smart Shipyard or Maritime Surveillance related challenges - of their own and linked to GALATEA-like initiatives

Important note: A project can answer one or multiple challenges in the same proposal (if the challenges are compatible between each other) or in different proposals (if the challenges are too far from each other)

