

# Analysis and technical functional modelling for the improvement of the vessel traffic management in the Adriatic Region

## 4.2.a.b\_ Annex 1

### Assessment of the alarm systems functionalities, rules and algorithm in the Adriatic Region and proposal of integration



#	Type of monitoring case	Italia	Slovenia	Croatia	Montenegro	Albania
1	Defines the maximum speed that the track can have (Speed Limit)	-VTS-System Max Speed: The alarm is generated by defining a maximum permitted speed, which can be set to a value belonging to the range 0-99 knots			-VTMIS-Speed Limit: target speed limit ((min, max) threshold)	
2	Prevents anchoring in areas where this is not allowed (No Anchorage Areas)	-VTS-Probable Anchorage Speed (PAS): The alarm is generated through the definition of a minimum allowed speed, which can be set to a value belonging to the range 0-9 knots				
3	Check the position of fixed tracks (buoys and anchored ships)	-VTS-Floating Buoy / Floating Ship: The alarm is generated by defining: -a maximum range permitted in FMR, which can be set to a value belonging to the range 0-999 meters and which is fixed to buoys, platforms, etc. -a maximum range permitted in MAR, which can be set to a variable value depending on the ship and that depends on the length of the anchor chain			-VTMIS-Anchorage Area: detection of vessel that is leaving the assigned anchorage area	<b>ANCHOR WATCH.</b> -The anchor watch feature helps you monitor whether own ship is dragged by wind and/or tide while at anchor. This feature requires ship position data from a suitable radio navigational aid. Provided that own ship's physical data has been entered, an own ship mark can be displayed when the anchor watch feature is activated. The message "ANCHOR WATCH ERR" appears in red when position data is not inputted.
4	Control of parameters defined in order to avoid the collision	-VTS-Collision: The alarm is generated by defining values and relationships between the following parameters: -distance To the Closest Point of Approach (DCPA), with respect to each track (excluding boe) or at special points (obstacles) -Time To reach the Closest Point of Approach (TCPA), with respect to each track (excluding boe) or at special points (obstacles) Decision Distance (DD), defined for vessels that are found in the sea in a radius defined by the DD, which can take values in the range 0-9999 meters -Standard Separation (SS), set minimum range between two ships or between a ship and a point and can take values from 0 to 9999 meters -Collision Time, minimum time required to maneuver to evade a collision, which can take values in a range of 0-59 minutes	-Transas NH 4.55-Collision alarm: Tracking of vessels by AIS	-Coast Watch - TRACK ALARM: For radar plots if no radar echo is received for a buoy in the given time interval	-VTMIS-Collision: distance and direction monitoring between targets and with reference point	<b>CPA/TCPA alarm</b> - The predicted CPA and TCPA of any target become less than their preset limits. Visual and aural alarms are generated when the predicted CPA and TCPA of any target become less than their preset limits. Press the AUDIO OFF key to acknowledge and silence the CPA/TCPA aural alarm.
5	Recognition of the position of the tracks and parameter control to be respected for navigation in the canals	-VTS-Controllo aree di canale: The alarm is generated by defining the values of the following parameters: - Ship Safe Domain (SSD): Safety distance that vessels must keep the canals, variable in the range 0-999 meters - Minimum Delta Time at Turning Point (MDTTP): time that must elapse between two transits (of two different ships) on the same turning point of a canal, variable in the range 0-59 minutes - Safety Distance from Centre Channel (SDCC): distance must maintain a ship from canal center. Can assume values in the range 0-99 meters - Safety Distance to Channel Edge (SDCE): distance than the canal edges and can take values in the range 0-999 meters - Lane Check: lane defined by directions of travel within the canal - Time Extrapolation Stranding (TES): time within which a ship is approaching to an area in the bottom lower than the draft of a certain nature				<b>GUARD ALARM-</b> A guard zone (guard alarm) may be set to alert the navigator to targets (ships, landmasses, etc.) entering a certain area with visual and audible alarms. The guard zone (guard alarm) has a fixed width of 0.5 nm in the radial direction and is adjustable only within 3.0 to 6.0 nm from own ship. The guard zone (guard alarm) can be set to any sector angle between 0 and 360 in any direction
6	Controlling of "no transit" areas	-VTS/PELAGUS-Forbidden Area: The alarm is generated by defining of "no transit" areas	-Transas NH 4.55-Restricted area alarm: Tracking of vessels by AIS	-Coast Watch - AREA ALARM: More than x vessels inside anchoring area b, more than x vessels under surveillance in sector a	-VTMIS-Forbidden Area: area intrusion detection with optionally filters (black/white lists, type of ships, type of cargo, navigational status, flag, speed, direction, etc.)	
7	Sounds alarm when DSC message is received		-SITRAC-Receiving DSC alarm: On receipt of Distress / Urgency / Safety / Routine DSC (for each category of DSC a different alarm sound is generated)		-GMDSS-Distress: Alarms on received distress calls	
8	Real time route assignment				-VTMIS-Route planning: target route deviation to an assigned route or traffic lane	
9	Real time grounding prediction				-VTMIS-Grounding: prediction of target grounding based on target draught and bathymetric charts data	
10	Vessel Dragging				-VTMIS-Dragging: Detection of possible vessel dragging on dangerous area	
11	Data inconsistency			-Coast Watch - BOUY ALARM: For radar plots if no radar echo is received for a buoy in the given time interval	-VTMIS-Sensors inconsistency: detection of inconsistency between AIS and radar values (speed, course, etc.)	<b>Lost target alarm</b> - Loss of a tracked target. When the system detects a loss of a tracked target, the target symbol becomes a flashing diamond, and the label "LOST" appears at the screen bottom. At the same time, an aural alarm is produced for one
12	EU Banned Ships			-Coast Watch - EU Banned Ships		
13	North Korea Banned			-Coast Watch - North Korea Banned		