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MCC Component Library and Source List

Mission Control Center architecture and gap analysis for autonomous offshore wind turbine inspection.

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25 June 2026

Emden, Germany

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PART ONE

MCC Component Library

Twenty-eight logical components across four architectural layers, derived from the five operational scenarios. This part presents the master component library, the scenario-by-scenario extraction, and the component reuse matrix.

Method

Each of the five operational scenarios was analysed step by step. For each step, the required MCC function was identified. Functions that serve the same purpose across multiple scenarios were consolidated into a single reusable component. The components are organised into four architectural layers: Presentation, Application, Integration, and Data. Each component traces back to an operational need defined in the scenarios.

Master component library (28 components)

PRESENTATION LAYER

What the operator sees and interacts with.

01 Operator Mission Workspace

The operator's main interface for creating, monitoring, pausing, aborting, and reviewing missions. Supports both remote and autonomous mode interaction.

02 Map & Operational View

Shows vessel, drone, turbine positions, routes, geofences, weather overlays, and last known positions on a geographic display.

03 Inspection Viewer

Displays preview images during the mission and full analysis results after data ingestion. Organised by turbine, blade, and position.

04 Alert & Incident Dashboard

Shows all operational alerts: weather warnings, lost link, launch failure, anomaly detection, corridor deviation, and authority notifications.

05 Deck Camera Viewer

Displays live video feed from the vessel's deck cameras. Used when no crew is on board to visually assess launch failures, drone recovery, and deck status.

APPLICATION LAYER

The logic that plans, decides, and monitors.

06 Mission Planning & Execution

Creates missions, manages mission state (planned, active, paused, aborted, completed), handles multi-turbine sequences and partial completion tracking.

07 Route Planning & Guidance

Generates or validates vessel and drone routes. In remote mode the operator approves the route. In autonomous mode the system generates it and the operator can override.

08 Resource Assignment Engine

Selects the best vessel and drone for a mission based on proximity, fuel level, battery health, drone availability, and operational status.

09

Weather & Operational Limits Engine

Compares real-time and forecast weather data against the operational and legal limits defined in the SORA authorisation. Blocks or warns when limits are approached or breached.

10

Telemetry & Health Monitoring

Receives and processes live telemetry from vessel and drone: GPS position, speed, fuel, battery, motor performance, IMU status, system health.

11

Launch & Recovery Control

Manages the full launch and recovery cycle: pre-flight diagnostics, launch command, launch confirmation, return-to-vessel command, landing confirmation, and drone box securing.

12

Inspection Monitoring & Preview Handling

Manages the real-time inspection workflow: tracks which blades have been inspected, receives metadata and preview images, and coordinates with the anomaly detection function.

13

Incident & Failsafe Management

Handles all abnormal situations: lost link detection, launch abort, weather abort, geofence breach, emergency landing, and flight termination. Manages escalation logic and automated failsafe responses.

14

Cargo Mission Management

Manages cargo-specific operations: delivery request intake, priority assessment, multi-stop delivery sequencing, delivery execution (winch or landing), and proof of delivery recording.

15

Payload & Dangerous Goods Validation

Checks cargo weight, dimensions, and centre of gravity against the drone's limits. Screens cargo for dangerous goods classification and enforces mandatory human verification for DG flights.

16

Decision Support & Recommendation Logic

Provides operational recommendations when the operator faces a choice: continue or abort, relaunch or send backup, hold position or return to port, wait for weather or reschedule.

17

Compliance & Reporting Manager

Generates mandatory documentation: occurrence reports for LBA and ILT within 72 hours (EU Regulation 376/2014), cross-border customs and tax records, dangerous goods transport records, and authority notification logs.

INTEGRATION LAYER

How the MCC connects to external systems.

18

Vessel Integration Adapter

Handles all communication between the MCC and the SMAS vessel: sends commands, receives telemetry, manages heartbeat monitoring, handles data buffering during link loss.

19

Drone Integration Adapter

Handles drone data received via the vessel relay: drone telemetry, flight controller status, inspection metadata, preview images, and failsafe state information.

20

Weather & External Data Adapter

Connects to external weather services (KNMI, DWD), marine traffic data, and other external data sources needed for mission planning and monitoring.

21

MCC-to-MCC Synchronisation

Maintains the dedicated connection between Eemshaven and Emden MCCs. Synchronises mission state, shares weather alerts across the border, and supports failover if one MCC loses its primary connection.

22

Partner & Authority Notification Adapter

Supports outbound notifications to the wind farm marine coordinator (VHF), aviation authorities (DFS, LVNL), coast guard (Kustwacht), and environmental authorities when required.

DATA LAYER

Where information is stored and retrieved.

23

Mission Repository

Stores mission definitions, parameters, assignments, status history, operator decisions, and completion records.

24

Telemetry Store

Stores all vessel and drone telemetry data for the duration of each mission and for post-mission review.

25

Inspection Data Store

Stores metadata, preview images (received in real time), and full high-resolution inspection datasets (ingested after return to port, up to 40 TB per mission).

26

Historical Inspection Repository

Stores previous inspection results for comparison. Allows the operator to view the condition of a turbine over time and identify trends.

27

Audit Trail & Event Log

Records every operator action, system event, and mission state change with timestamps. Supports traceability, auditability, and expected NIS2 compliance requirements.

28

Incident Evidence Store

Preserves all evidence related to incidents: deck camera footage, flight logs, screen recordings, telemetry snapshots, and diagnostic data from the moment of an incident.

Scenario-by-scenario extraction

Each operational step is mapped to the required MCC function and to the component that provides it. Component names follow the canonical master library.

SCENARIO 1 Scheduled Inspection Mission

Covers the full lifecycle of a blade inspection, from planning through execution to post-mission analysis. It establishes the core MCC component set.

SCENARIO STEP	MCC FUNCTION	COMPONENT
Inspection is due	Register that an inspection must be planned	Mission Planning & Execution
Operator reviews previous data	Retrieve and display historical inspection records	Historical Inspection Repository, Inspection Viewer
Operator checks weather	Retrieve and evaluate weather for mission feasibility	Weather & Operational Limits Engine
Operator selects turbine T14	Capture inspection target selection	Mission Planning & Execution
Operator creates mission, selects mode	Create mission, store parameters, set remote or autonomous	Mission Planning & Execution, Mission Repository
Operator enters inspection type and priority	Store mission metadata	Mission Repository

MCC checks route conditions	Compare conditions against safety thresholds	Weather & Operational Limits Engine
Route is created or approved	Create, display, and manage route plan	Route Planning & Guidance, Map & Operational View
System assigns vessel and drone	Evaluate and select best vessel-drone combination	Resource Assignment Engine
Operator confirms assignment (remote)	Support human approval of selected resources	Operator Mission Workspace
Vessel departs	Change mission state to active, log departure	Mission Planning & Execution, Audit Trail & Event Log
MCC tracks vessel position	Display live vessel position and route progress	Map & Operational View, Telemetry & Health Monitoring
MCC monitors weather during transit	Continuously reassess route and destination conditions	Weather & Operational Limits Engine
MCC alerts if weather changes	Detect threshold changes and notify operator	Alert & Incident Dashboard
Vessel arrives and MCC confirms position	Validate vessel arrival before launch	Launch & Recovery Control
Launch command is sent	Send launch authorisation and manage sequence	Launch & Recovery Control
Drone launches, reports status via vessel	Receive and interpret drone operational status	Drone Integration Adapter, Telemetry & Health Monitoring
Operator sees drone on screen	Show drone position and state during mission	Map & Operational View
Drone performs blade inspection	Track inspection execution and progress per blade	Inspection Monitoring & Preview Handling
Operator sees camera feed (remote)	Show live preview feed and support manual adjustment	Inspection Viewer
MCC tracks drone battery	Monitor drone energy state throughout mission	Telemetry & Health Monitoring
MCC decides continue or return on low battery	Support operational continue/return decision	Decision Support & Recommendation Logic
Metadata and previews sent real-time	Receive and manage lightweight real-time data stream	Inspection Monitoring & Preview Handling, Inspection Data Store
Anomaly flagged to operator	Receive anomaly flags and show priority alerts	Alert & Incident Dashboard
MCC records all actions and timeline	Store time-stamped action history	Audit Trail & Event Log, Mission Repository
MCC stores telemetry and previews	Persist operational and inspection data	Telemetry Store, Inspection Data Store
Drone returns to vessel, confirmed secured	Track recovery and confirm drone secured	Launch & Recovery Control
Multi-turbine continuation if applicable	Manage multi-stop mission sequence	Mission Planning & Execution
Vessel returns to port	Update mission return state and log arrival	Mission Planning & Execution, Audit Trail & Event Log
Full dataset transfers at port	Manage post-mission full dataset ingestion (up to 40 TB)	Inspection Data Store
Full AI analysis triggered	Start full post-mission analysis workflow	Inspection Monitoring & Preview Handling
Operator reviews results, compares history	Present full inspection results with historical comparison	Inspection Viewer, Historical Inspection Repository
Operator records maintenance decision	Store final operational decision	Mission Repository

SCENARIO 2 Communication Loss During a Mission

Adds incident detection, MCC-to-MCC coordination, backup communication, authority notification, evidence preservation, and occurrence reporting to the component set.

SCENARIO STEP	MCC FUNCTION	COMPONENT
Heartbeat stops for 3-5 seconds	Detect communication interruption	Telemetry & Health Monitoring, Incident & Failsafe Management
Lost Link warning on operator screen	Present incident alert with last known data	Alert & Incident Dashboard
Vessel icon changes to lost contact	Show degraded contact status visually	Map & Operational View
Alert specifies if drone was airborne	Add mission context to incident alert	Alert & Incident Dashboard
Both MCCs synchronise via backup link	Synchronise mission state between Eemshaven and Emden	MCC-to-MCC Synchronisation

Operator attempts backup communication	Support communication recovery actions	Vessel Integration Adapter, Incident & Failsafe Management
Operator monitors last known position	Present partial operational picture	Map & Operational View
Operator contacts marine coordinator	Support external notification workflow	Partner & Authority Notification Adapter
MCC notifies DFS/LVNL if drone exits geofence	Trigger regulatory notification workflow	Compliance & Reporting Manager, Partner & Authority Notification Adapter
Cross-border notification needed (NL/DE)	Manage dual-authority notification requirement	Compliance & Reporting Manager
Link restores, vessel sends buffered data	Receive delayed telemetry and status data	Vessel Integration Adapter, Telemetry Store
MCC reconstructs mission timeline	Rebuild event history after outage	Audit Trail & Event Log, Mission Repository
Operator assesses mission viability	Support continue/adjust/abort decision	Decision Support & Recommendation Logic
Link does not recover, vessel follows failsafe	Track timeout and vessel failsafe execution	Incident & Failsafe Management
MCC locks all logs and recordings	Preserve evidence from moment of incident	Incident Evidence Store
Incident logged in audit trail	Record complete incident history	Audit Trail & Event Log
Occurrence report filed if required	Generate formal occurrence report (72h, EU 376/2014)	Compliance & Reporting Manager
Team debriefs and evaluates changes	Support structured post-incident review	Incident & Failsafe Management

SCENARIO 3 Drone Launch Failure

Adds pre-flight diagnostics handling, deck camera assessment (critical because the SMAS vessel has no crew on board), launch abort management, flight termination override, and fault isolation.

SCENARIO STEP	MCC FUNCTION	COMPONENT
Drone box runs Built-In Test	Receive and evaluate pre-flight diagnostic results	Launch & Recovery Control, Telemetry & Health Monitoring
Pre-flight check fails, MCC notified	Show launch-blocking condition and specific reason	Alert & Incident Dashboard
MCC checks weather against takeoff limits	Validate launch conditions against certified limits	Weather & Operational Limits Engine
Operator sees warning, may override (remote)	Present launch-blocking warning, support override	Operator Mission Workspace
System checks vessel stability	Validate vessel platform stability for launch	Telemetry & Health Monitoring
Launch command sent, drone attempts takeoff	Execute and monitor launch sequence	Launch & Recovery Control
Flight controller aborts (motor/IMU/GPS)	Receive abort information from drone systems	Drone Integration Adapter, Incident & Failsafe Management
MCC shows failure alert	Present failure event to operator	Alert & Incident Dashboard
Operator sees drone last known state	Show post-abort status	Map & Operational View
Operator switches to deck cameras	Provide visual assessment of deck situation	Deck Camera Viewer
MCC commands drone box to close	Support command to secure drone safely	Launch & Recovery Control
Drone marked non-operational	Update drone availability and fault status	Resource Assignment Engine
Drone in water: GPS coordinates recorded	Record ditching position for recovery	Incident & Failsafe Management
Operator activates FTS if drone drifts	Support emergency flight termination override	Launch & Recovery Control, Incident & Failsafe Management
Operator decides: relaunch, backup, abort	Support next-step mission decision after failure	Decision Support & Recommendation Logic
Backup drone checked if available	Check alternative drone availability	Resource Assignment Engine
Mission continues or is aborted	Update mission plan after launch failure	Mission Planning & Execution
Full incident recorded	Store complete incident record	Audit Trail & Event Log, Incident Evidence Store
Occurrence report if reportable	Generate occurrence report (EU 376/2014)	Compliance & Reporting Manager
Drone paused until root cause resolved	Track fault status and block future assignment	Resource Assignment Engine

SCENARIO 4 Weather Deterioration During a Mission

Strengthens the weather monitoring, legal limit checking, recovery coordination, and cross-MCC weather sharing components. It places heavy demands on multi-source weather integration and abort decision logic.

SCENARIO STEP	MCC FUNCTION	COMPONENT
Drone sensors detect turbulence	Receive drone weather-stress indicators	Telemetry & Health Monitoring
Vessel sensors measure wind and waves	Receive vessel-side weather data	Telemetry & Health Monitoring
MCC receives external forecast updates	Integrate external weather sources	Weather & External Data Adapter
MCC compares conditions to authorised limits	Evaluate weather against SORA legal thresholds	Weather & Operational Limits Engine
Mission status changes to caution	Update mission risk state	Mission Planning & Execution, Alert & Incident Dashboard
Operator sees weather alert with trends	Present weather deterioration and proximity to limits	Alert & Incident Dashboard
System applies safety margin (~80% of limit)	Evaluate early-abort threshold	Weather & Operational Limits Engine
Drone holds position while assessed	Support temporary hold during risk assessment	Launch & Recovery Control
Operator decides continue/pause/abort (remote)	Support weather-based operator decision	Operator Mission Workspace
System auto-initiates return (autonomous)	Trigger automated weather-based recovery	Decision Support & Recommendation Logic, Incident & Failsafe Management
MCC sends Return to Vessel command	Start drone recovery sequence	Launch & Recovery Control
MCC monitors battery during return	Track drone energy during weather recovery	Telemetry & Health Monitoring
Vessel prepares lee-side landing heading	Coordinate vessel recovery positioning	Vessel Integration Adapter, Mission Planning & Execution
Drone lands, box locks, MCC confirms	Confirm successful recovery and secure lock	Launch & Recovery Control
Drone cannot land safely: alternative actions	Support hover/divert/ditch decision	Incident & Failsafe Management
MCC decides vessel holds or returns to port	Support post-recovery operational decision	Decision Support & Recommendation Logic
MCC notifies marine coordinator	Send operational notification to coordinator	Partner & Authority Notification Adapter
MCC alerts other MCC about weather front	Share weather risk across NL/DE border	MCC-to-MCC Synchronisation
Full weather event logged	Store weather event and mission response history	Audit Trail & Event Log
Compliance documented if limits breached	Document weather-limit breach for reporting	Compliance & Reporting Manager
Mission marked partially completed	Track partial completion for follow-up scheduling	Mission Planning & Execution, Mission Repository

SCENARIO 5 Cargo Delivery to Offshore Wind Turbine

Shifts the MCC from inspection management to cargo logistics. It adds cargo-specific functions: delivery request handling, payload and dangerous goods validation, delivery execution, proof of delivery, and cross-border cargo documentation.

SCENARIO STEP	MCC FUNCTION	COMPONENT
MCC receives delivery request	Receive and register cargo delivery request	Cargo Mission Management
MCC assesses urgency	Evaluate delivery priority (emergency vs planned)	Cargo Mission Management, Decision Support & Recommendation Logic
MCC checks weight, dimensions, CoG	Validate payload feasibility for drone transport	Payload & Dangerous Goods Validation
MCC screens for dangerous goods	Check cargo against DG classification rules	Payload & Dangerous Goods Validation
Operator confirms DG shipment (mandatory)	Support mandatory human approval for DG flights	Operator Mission Workspace, Compliance & Reporting Manager
MCC calculates delivery route	Plan vessel/drone route for efficiency	Route Planning & Guidance, Cargo Mission Management
MCC checks weather for delivery	Validate cargo mission conditions	Weather & Operational Limits Engine
Loading team sends digital confirmation	Receive payload readiness confirmation	Payload & Dangerous Goods Validation
MCC verifies pre-departure conditions	Confirm mission readiness before departure	Mission Planning & Execution

Vessel departs, MCC tracks transit	Monitor vessel position and conditions	Map & Operational View, Telemetry & Health Monitoring
Vessel arrives, drone launches	Execute delivery launch sequence	Launch & Recovery Control
Drone flies route, MCC monitors corridor	Monitor delivery flight and corridor compliance	Telemetry & Health Monitoring, Alert & Incident Dashboard
Drone performs winch delivery or landing	Manage delivery execution method	Cargo Mission Management
Operator monitors delivery via camera (remote)	Present delivery feed for supervision	Operator Mission Workspace
MCC records delivery confirmation	Register proof of delivery	Cargo Mission Management, Mission Repository
Drone returns to vessel, secured	Track recovery phase after delivery	Launch & Recovery Control
Multi-stop: MCC optimises next delivery	Manage multi-stop cargo mission sequence	Cargo Mission Management, Route Planning & Guidance
Vessel returns to port	Update mission state and log arrival	Mission Planning & Execution
MCC records full mission and manifests	Store complete cargo mission record	Mission Repository, Audit Trail & Event Log
Flight data uploaded for review	Preserve post-flight technical data	Telemetry Store
Cross-border documentation completed	Manage cross-border customs, tax, DG records	Compliance & Reporting Manager
Anomalies documented and assessed	Assess if anomalies are reportable occurrences	Compliance & Reporting Manager

Component reuse across scenarios

A component used in all five scenarios is a core MCC function. A component used in only one scenario is specialised for that operational situation.

S1 Scheduled Inspection S2 Communication Loss S3 Launch Failure S4 Weather Deterioration S5 Cargo Delivery

#	Component	S1	S2	S3	S4	S5
01	Operator Mission Workspace	●	●	●	●	●
02	Map & Operational View	●	●	●		●
03	Inspection Viewer	●				
04	Alert & Incident Dashboard	●	●	●	●	●
05	Deck Camera Viewer			●		
06	Mission Planning & Execution	●		●	●	●
07	Route Planning & Guidance	●				●
08	Resource Assignment Engine	●		●		
09	Weather & Operational Limits Engine	●		●	●	●
10	Telemetry & Health Monitoring	●	●	●	●	●
11	Launch & Recovery Control	●		●	●	●
12	Inspection Monitoring & Preview Handling	●				
13	Incident & Failsafe Management		●	●	●	
14	Cargo Mission Management					●
15	Payload & Dangerous Goods Validation					●
16	Decision Support & Recommendation Logic	●	●	●	●	●
17	Compliance & Reporting Manager		●	●	●	●
18	Vessel Integration Adapter	●	●		●	
19	Drone Integration Adapter	●		●		
20	Weather & External Data Adapter	●			●	

21	MCC-to-MCC Synchronisation		●		●	
22	Partner & Authority Notification Adapter		●		●	
23	Mission Repository	●	●		●	●
24	Telemetry Store	●	●			●
25	Inspection Data Store	●			●	
26	Historical Inspection Repository	●				
27	Audit Trail & Event Log	●	●	●	●	●
28	Incident Evidence Store		●	●		

● Security components

The component library deliberately does not include security-specific components (authentication, authorisation, encryption, access control, intrusion detection). These are cross-cutting concerns that apply to every component and every data flow, rather than standalone functional components. Security requirements are analysed separately during the security phase of the project, which defines which security mechanisms apply to each component and each interface identified here.

● Next steps

This component library and the scenario extractions are the input for the next phase of the architecture work: tracing the dataflows between components, defining the interface that each dataflow implies, comparing the result against what DroneQ and EMO currently provide (the gap analysis), and analysing security threats and compliance requirements per component and per interface.

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PART TWO

Source List

Sources consulted for the SMAS architecture and gap analysis, organised into eight categories.

Architecture and System Design

Reference architectures, system design, and ground control station literature.

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- 02 Drone and Robotic Inspection of Wind Turbines**
 US Department of Energy, SBIR application resource, 2023
science.osti.gov/-/media/sbir/pdf/Application_Resources/2023/DroneAndRoboticInspOfWindTurbinesFINAL_101423.pdf
- 03 Collaborative Unmanned Vehicles for Inspection, Maintenance, and Repairs of Offshore Wind Turbines**
 MDPI Drones, vol. 6(6), 137, 2022
mdpi.com/2504-446X/6/6/137
- 04 Reference Architecture Specification for Drone Systems**
 Microprocessors and Microsystems, Elsevier, 2022. COMP4DRONES project
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- 05 A Review on Drone Ground Control Station, Configurations, Types and the Communication Systems**
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- 06 Drone Ground Control Station with Enhanced Safety Features**
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- 07 Drone Safety and Security Surveillance System (D4S)**
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- 08 SaturnX: satellite-connected BVLOS offshore wind inspection**
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business.esa.int/projects/saturnx
- 09 QGroundControl: Ground Control Station User Guide**
 Dronecode, open-source documentation
qgroundcontrol.com
- 10 Ground Control Station technology overview**
 Defense Advancement, industry reference
defenseadvancement.com/suppliers/gcs-software/

Drone Technology and Failsafes

Flight control, return-to-home, and flight termination behaviour.

- 11 PX4 Safety Configuration (Failsafes)**
 PX4 Autopilot User Guide, open-source documentation
docs.px4.io/main/en/config/safety
- 12 PX4 Flight Termination**
 PX4 Autopilot User Guide, open-source documentation
docs.px4.io/main/en/advanced_config/flight_termination.html
- 13 DJI Return-to-Home (RTH) behaviour**
 DJI, official product documentation
support.dji.com

14 ArduPilot Failsafe documentation
ArduPilot, open-source autopilot documentation
ardupilot.org/copter/docs/radio-failsafe.html

15 Percepto autonomous inspection platform
Percepto, drone-in-a-box vendor documentation
percepto.co/drone-in-a-box/

Communication Protocols and Data

Telemetry and command protocols, and mission software.

16 MAVLink micro air vehicle communication protocol
Dronecode, protocol specification
mavlink.io/en/

17 Auterion Mission Control
Auterion, drone software platform documentation
auterion.com/product/mission-control/

Partner Systems and Standards

SMAS partner systems and the governing operations standard.

18 DroneQ Robotics: drone inspection operations (D-DOC, AAIMS)
DroneQ Robotics, partner system reference
droneq.nl/?lang=en

19 EMO, Windea and VENTUSmarine: maritime coordination
EMO and VENTUSmarine, partner system reference
offshoreservice.de/en/ · windea.com

20 Unmanned aircraft systems. Part 3: Operational procedures
ISO 21384-3:2023
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RWE, 2025. Skyways, Skyports and Ampelmann
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 Robosys, maritime autonomy vendor
marinetechnologynews.com
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 Windtech International, industry press
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- 30 FB3 heavy-lift cargo drone**
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- 31 Skyways V2 BVLOS cargo drone**
 Skyways, vendor reference
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 Skyports, vendor reference
skyportsdroneservices.com
- 33 Autonomous wind turbine blade inspection**
 SkySpecs, vendor reference
skyspecs.com/product/inspections/
- 34 SmartSea maritime maintenance management**
 SmartSea (Norway), commercial maintenance platform
com.smartsea.no/systems/maintenance/
- 35 Smart Maintenance at Sea (SMAS) project**
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tcnn.nl/smas-smart-maintenance-at-sea/
- 36 Eemshaven port operations**
 Groningen Seaports, port authority
groningen-seaports.com/en/industries/offshore-wind/

Security Frameworks

Cybersecurity directives, laws, and control frameworks for critical infrastructure.

- 37 Directive (EU) 2022/2555 (NIS2)**
 European Union, network and information security directive
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wetten.overheid.nl
- 39 IT-Sicherheitsgesetz and NIS2UmsuCG (BSIG)**
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gesetze-im-internet.de
- 40 IEC 62443: Security for industrial automation and control systems**
 International Electrotechnical Commission
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- 41 Cybersecurity Framework (CSF) 2.0**
 NIST, United States, 2024
nist.gov/cyberframework
- 42 Threat landscape and security guidance**
 ENISA, EU Agency for Cybersecurity
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- 49 Inspectie Leefomgeving en Transport (ILT)**
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- 50 DFS and LVNL: air navigation services**
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 Germany, Luftverkehrs-Ordnung
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Legal and Compliance: Infrastructure, Environment, Cross-border

Data protection, environmental protection, maritime coordination, and cross-border transport.

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 European Union, data protection
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- 55 Netherlands Coastguard (Kustwacht)**
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