



VEYRUM ROBOTICS STANDARD



VRS-MAR-001

Marine & Subsea Sector Standard

Application Rating requirements for underwater and surface marine robots — VRS 2026 layout.

VEYRUM RESEARCH INSTITUTE

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Contents

1 1 Scope

2 2 Normative references

3 3 Terms and definitions

4 4 Capability gate and applicability

5 5 Sector hazard taxonomy

6 6 Rubric and grade bands

7 7 Evidence requirements

8 8 Loss-driver mapping (insurance and finance fitness)

9 9 Protocol references

10 10 Worked example (informative) – applicability walkthrough

11 Annex A (normative) – Continued-validity module (class-survey form)

12 Bibliography

13 Change history

Foreword. Sector standard for the **Marine & Subsea (MAR)** sector — capability-gated, with the continued-validity module in its **class-survey form** (Annex A): the classification-society insight that a marine rating is a *living* status maintained by periodic survey, not a point-in-time certificate. The defining loss driver is the **asset itself**: a vehicle lost at depth may be unrecoverable, so a marine failure is often a total write-off rather than a repair, and recoverability governs severity as much as frequency does. A regime fact shapes this sector: the IMO adopted a **non-mandatory MASS Code** for autonomous surface ships (MSC 111, 22 May 2026; the mandatory Code is targeted for 1 January 2032), but **subsea AUV/ROV operation remains outside it**, governed by class-society rules and flag-state discretion — so class rules and notations are the strongest available floor. Anchors were verified against issuing-body pages on 2026-09-13 (Bibliography). Numeric thresholds are not set here; they live as priors in the VRS-MAR-501 twin (§6.1, VRS-GEN-202). A Marine & Subsea AR is an opinion, not a certification, and no display implies a real robot holds a Veyrum rating (VRS-GEN-006 §10). Requirements use “shall”; recommendations use “should”.

1 Scope

This Standard defines the requirements for issuing a **Marine & Subsea AR**: the capability gate and applicability (Clause 4), the sector hazard taxonomy (Clause 5), the rubric and grade bands (Clause 6), evidence requirements (Clause 7), the loss-driver mapping for insurance and finance fitness (Clause 8), protocol references (Clause 9), a worked applicability example (Clause 10), and the continued-validity survey obligations (Annex A). Its clauses follow the universal sector template (VRS-GEN-002 §6.4).

It covers autonomous underwater vehicles (AUVs), remotely operated vehicles (ROVs), uncrewed surface vessels (USVs), and hull/offshore-inspection robots. The scoring mathematics are excluded (VRS-GEN-005/006; the sector’s scoring content lives in VRS-MAR-201 with its data twin VRS-MAR-501).

Boundary with adjacent sectors: dockside or onboard robots that do not operate in water are rated under their own operating sector; crewed vessels and crewed-submersible type-approval are out of VRS scope. Robot form is not a sector (VRS-GEN-001 §3.4.3): tethered, free-swimming, and surface platforms are all rated under MAR by this Standard when the Clause 4 capability gate holds.

2 Normative references

The documents below constitute requirements of this Standard where cited (dated at assessment unless stated; referencing rules per VRS-GEN-002 §7.3).

- **VRS-GEN-001**, Vocabulary; **VRS-GEN-005**, IR Methodology; **VRS-GEN-006**, AR Scheme; **VRS-GEN-007**, Sector Classification; **VRS-GEN-009**, Passport & Registry Schema; **VRS-GEN-012**, Evidence & Data Requirements (evidence grades).
- **VRS-MAR-201**, Marine & Subsea AR Assessment Protocol (scoring; dated at assessment); its data twin is **VRS-MAR-501**.

- **VRS-GEN-202**, Calibration & Validation (constant stage labels and fitting); **VRS-GEN-008**, Application of Ratings (continued-validity machinery).
- Anchor regime (verified 2026-09-13) – anchors and evidence lanes, **not** conformity floors VRS re-certifies (VRS-GEN-001 §3.5.1); the ISO 8373:2021 term basis is cross-referenced in Clause 3:
 - **ABS Rules for Building and Classing Underwater Vehicles, Systems and Hyperbaric Facilities** – living class rules with a dedicated AUV requirements section (section numbering shifts by edition; 2014/2020/2021 editions confirmed, notices current through 2026): the edition in force at assessment applies. Class floor for the **auv-free** and **rov-tethered** classes.
 - **DNV AROS class notations** (Autonomous and Remotely Operated Ships, 2025) – framework notations for autoremote surface vessels achieving equivalent-or-higher safety; anchor for the **usv-surface** class.
 - **IMO MASS Code** – the non-mandatory *International Code of Safety for Maritime Autonomous Surface Ships* (adopted MSC 111, 22 May 2026; effective 1 July 2026; mandatory Code targeted 1 January 2032). Applies to autonomous **surface** operation (**usv-surface**); subsea operation remains outside it. Per-flag requirements are recorded at assessment.
 - **COLREGs 1972** – Convention on the International Regulations for Preventing Collisions at Sea, 1972 (in force 1977). Collision-avoidance basis for **usv-surface** operating among crewed traffic (H3); the assessed collision-avoidance case is mapped to its rules.
 - **IEC 60945:2002** (Fourth edition, incl. Cor.1:2008) – Maritime navigation and radiocommunication equipment: general requirements, test methods, required results. Environmental/type-test lane for H2.
 - **IEC 61508:2010** (Second edition) – Functional safety of E/E/PE safety-related systems (SIL). Control-function integrity lane for H3/H4.
 - **IEC 62443-4-2:2019** – Technical security requirements for IACS components (security levels SL-C against foundational requirements FR1–FR7). Cyber lane for the C2/acoustic link and topside station (H4).
 - **ISO 14224:2016** – Collection and exchange of reliability and maintenance data for equipment; the per-vehicle maintenance-record lane for H5/H6.
 - **ASTM F2541-06** – Standard Guide for Unmanned Undersea Vehicles (UUV) Autonomy and Control (Level-of-Autonomy construct). Autonomy-mode declaration lane for H4.

3 Terms and definitions

For the purposes of this Standard, the terms in VRS-GEN-001 (aligned to ISO 8373:2021) apply, together with the following local terms:

- **operation class** – a declared category of assessed operation; at minimum one of **rov-tethered**, **auv-free**, **usv-surface**, **hull-offshore-inspection**, each mapped to the class rule or notation it requires.
- **submersion rating** – the declared depth/pressure envelope, expressed as maximum operating depth in metres (m) and the corresponding external pressure; the boundary against which H2 integrity is evidenced.

- **survey** — periodic evidence-based revalidation in the classification-society sense (see Annex A), the mechanism by which a marine rating remains valid.
- **tether class** — whether the platform is tethered (ROV, umbilical-powered/communicated) or free-operating (AUV/USV); it governs the loss-of-comms and recovery cases.
- **recoverability** — whether a vehicle lost or disabled at its declared depth can be recovered or must be written off; the sector-defining severity modifier, recorded by depth class (m).
- **exposure-envelope attributes** — recorded per operation class, not denominators: declared maximum depth (in metres, m), sea-state envelope (Douglas/Beaufort scale), and topside transit speed where applicable (in metres per second, m/s). The exposure denominators themselves — **mission-hours** and the **launch-and-recovery (L&R) evolution** — are defined in VRS-MAR-201 §3.

4 4 Capability gate and applicability

4.1 MAR is a **capability-gated sector**: the model shall possess **water operation capability** — a declared submersion rating for subsea platforms, or a declared seakeeping envelope for surface platforms (the sector prerequisite of VRS-GEN-007 §5.1). A model without water operation capability is **not-applicable**, determined and displayed per VRS-GEN-007 §5.1 and VRS-GEN-006 §5.1.

4.2 For water-capable models, applicability is determined per VRS-GEN-006 §5.2 (manufacturer declaration or assessor override with recorded rationale; default not-applicable).

4.3 The assessed envelope shall state the **operation classes** covered — at minimum one of **rov-tethered**, **auv-free**, **usv-surface**, **hull-offshore-inspection** — each recorded as a protocol applicability field (VRS-GEN-007 §4.2) together with the declared depth/sea-state envelope.

4.4 Each declared operation class shall carry its **exposure envelope**: maximum operating depth (m), sea-state envelope (Douglas/Beaufort), tether class, and topside transit speed (m/s) where applicable.

4.5 Operation classes are the sector's **segments**: per-operation-class letters where evidence diverges materially, lowest-issued-letter display, and *not-covered* handling of unassessed classes follow VRS-GEN-006 §8.3 (the single home of that rule), as implemented for this sector in VRS-MAR-201 §4.3.

5 5 Sector hazard taxonomy

The Marine & Subsea AR shall weigh, at minimum, the following hazard groups. Each maps to the IR categories (VRS-GEN-005 §5) it draws evidence from and to its dominant loss driver; the sector emphasis (weights) is defined in VRS-MAR-201, not here.

#	HAZARD GROUP	ARCHETYPE	PRIMARY IR CATEGORIES	LOSS DRIVER
H1	Loss at sea	vehicle loss (sinking, drift-away, unrecoverable at depth); the asset itself is the primary casualty	reliability, economics_residual	severity (asset), recoverability
H2	Pressure and ingress	hull/penetrator failure at depth; corrosion; bio-fouling attrition	reliability, spec_integrity	frequency, residual value
H3	Navigation and collision	collision with vessels/structures/divers; surfacing into traffic; tether entanglement	safety_incidents, cyber_posture	severity (third-party), frequency
H4	Communications and control	acoustic/RF link constraints; loss-of-comms behaviour; GNSS-denied navigation drift	reliability, cyber_posture	frequency, correlated/cyber-catastrophe
H5	Launch and recovery	deck operations – historically the highest human-injury exposure of subsea work	safety_incidents, serviceability	severity (human), exposure
H6	Environment and payload	fuel/hydraulic release; sensitive-site contact (pipelines, cables, wrecks)	safety_incidents, manufacturer_support	severity (third-party), frequency

5.1 The hazard taxonomy shall be treated as the minimum coverage set: an assessment that omits a hazard group applicable to the declared operation classes shall record the omission and its reason.

5.2 H1 (loss at sea) is the sector-defining loss driver: severity shall be weighted by whether the vehicle is **recoverable** at its declared depth, so that an unrecoverable loss is treated as a total write-off and not as a repairable event. The recoverability determination shall be evidenced from the declared submersion rating (maximum depth in m) and any recovery provision (buoyancy release, acoustic transponder, tether retrieval), not inferred from a shallower class.

5.3 For the **usv-surface** class, H3 (navigation and collision) evidence shall include a collision-avoidance basis mapped to the COLREGs 1972 steering-and-sailing rules and, where the control function is safety-related, a functional-safety case (IEC 61508:2010 SIL); a bare declaration shall not clear H3 for surface operation among crewed traffic.

5.4 H4 (communications and control) shall not be scored from transferred evidence where the assessed operation class introduces a new link or navigation environment (for example, promoting a **rov-tethered** model to **auv-free** free-swimming); the loss-of-comms behaviour and GNSS-denied navigation case shall rest on the assessed class's own instrumented evidence.

6 Rubric and grade bands

6.1 The Marine & Subsea sector AR is determined per VRS-MAR-201 from the criterion pool defined there; letters follow VRS-GEN-006 §4. Criterion thresholds, pool ceilings and the reserved-hard AAA band are priors held and fitted only in the VRS-MAR-501 twin (VRS-GEN-202), per VRS-GEN-006 §4.1 and §8.1; no threshold or ceiling is set in this document.

6.2 Anchor and class-rule conformity for the assessed operation class — an applicable ABS UUV rules section, a DNV AROS notation for **usv-surface**, or an equivalent society's rules/notations — is scored by VRS-MAR-201 as criterion **MAR-1** (a large-range criterion, not a gate): absence of evidenced class-rule conformity scores zero on MAR-1 there and does not withhold a letter. Flag-state requirements and, for **usv-surface**, the non-mandatory IMO MASS Code, where they apply to the assessed operation, are floor evidence (recorded, not re-certified).

6.3 Where a declared class is operated outside its permitted envelope or without the authorisation its jurisdiction requires, the assessed envelope shall be contracted to the permitted operation per VRS-MAR-201 §4.3/§4.4; operating outside a permitted envelope is a compliance matter, not a rating criterion.

7 Evidence requirements

7.1 Evidence shall be graded per VRS-GEN-012. Sector-relevant sources include dive/mission logs (mission-hours by depth class and sea state), loss/recovery records, class survey reports, class certificates and notations, launch-and-recovery incident logs, and pressure/hyperbaric test certificates.

7.2 For each hazard group, an existing conformity or class artefact should be mapped to the VRS evidence lane so that adoption costs a manufacturer a mapping rather than new testing:

HAZARD	EXISTING ARTEFACT (EXAMPLE)	VRS EVIDENCE LANE
H1	class survey report; mission/recovery logs; ABS UWV buoyancy-and-recovery evidence	reliability, economics_residual
H2	pressure/hyperbaric certificate to the declared depth; IEC 60945:2002 environmental type tests; corrosion/bio-fouling inspection records	reliability, spec_integrity
H3	COLREGs 1972 collision-avoidance trial (USV); IEC 61508:2010 SIL case for the control function; DNV AROS notation record	safety_incidents, cyber_posture
H4	induced loss-of-comms / GNSS-denied behaviour trial; ASTM F2541-06 autonomy-mode declaration; IEC 62443-4-2:2019 SL-C link evaluation	reliability, cyber_posture
H5	launch-and-recovery procedure with deck-injury incident log; ISO 14224:2016 maintenance/occurrence records	safety_incidents, serviceability
H6	fuel/hydraulic containment test; sensitive-site contact-avoidance procedure; ISO 14224:2016 records	safety_incidents, manufacturer_support

7.3 Sufficiency for **applicable** → **rated** (per VRS-GEN-006 §6.1c) shall meet the minimum mission-hour and occurrence counts held as priors in VRS-MAR-501 (VRS-GEN-202 §5) and the per-criterion evidence bars of VRS-GEN-012 §4. Where evidence for a criterion is absent, that criterion scores zero (no evidence = 0 points) rather than withholding the letter; where a declared class lacks sufficient own-class history, its letter rests on the company-wide fallback of VRS-GEN-005 §6.

7.4 Where H1 or H4 evidence rests on manufacturer declaration alone, without a survey report, test record, or authorisation, the affected criterion shall not exceed the **Unverified** tier on that evidence and the assessment shall record the evidence gap; uninstrumented field-return recollection is admissible only at the Unverified tier.

8 Loss-driver mapping (insurance and finance fitness)

8.1 Every quantity that feeds the MAR rating shall be traceable to a loss driver and to a Robot Risk Passport field (VRS-GEN-009), so that an underwriter or lender can compute it from obtainable evidence. The mapping is:

LOSS DRIVER	MAR SIGNAL	EXPOSURE DENOMINATOR	CONSUMES
Frequency	H2 ingress/pressure faults; H4 loss-of-comms/nav faults; H3 near-collisions	per 1,000 mission-hours	reliability, safety_incidents
Severity (asset)	H1 total-asset-loss-at-sea (unrecoverable vehicle)	per event, weighted by asset value	reliability, economics_residual
Severity (third-party / human)	H3 collision with vessel/structure/diver; H5 deck-crew injury	per event; per L&R evolution	safety_incidents
Exposure	mission-hours accrued in the declared class; L&R evolutions performed	mission-hours; L&R evolutions	reliability, safety_incidents
Recoverability	recoverable vs. unrecoverable loss at the declared depth	per event, by depth class (m)	economics_residual, serviceability
Residual value / obsolescence	corrosion/bio-fouling attrition; pressure-cycle fatigue life; end-of-support horizon (months)	per model	economics_residual
Correlated / cyber-catastrophe	shared C2/acoustic link, common GNSS dependency, or fleet firmware plane	per fleet	cyber_posture

8.2 A MAR signal that lacks an exposure denominator shall not be scored as a frequency; it shall be recorded as a descriptive attribute or elevated as a design question (VRS-GEN-202). No loss statistic shall be invented to fill a missing denominator.

8.3 The rating output shall be expressed so that it can feed an underwriting decision (rate relativity, deductible, exclusion, condition) or a credit decision (loan-to-value, residual curve, covenant), and shall be recorded in the Passport with its tier and evidence-basis flags (VRS-GEN-006 §9.3, VRS-GEN-009).

8.4 Recoverability is the finance- and insurance-risk driver unique to this sector: because a vehicle lost at depth may be an irretrievable total loss, the declared maximum depth (m), the recovery provision, and the recoverable/unrecoverable determination (§5.2) shall be surfaced as Passport attributes so an underwriter can read the total-loss severity floor and a lender can set the residual curve from the depth envelope rather than from list price alone.

8.5 Correlated and cyber-catastrophe accumulation (H4) shall be surfaced as a Passport-recorded attribute: where many units of a model share one C2/acoustic link, a common GNSS dependency, or one firmware/update plane, one adversary action or one defective update can degrade or capture the fleet at once, so the risk does not diversify the way independent mechanical failures do. The attribute shall record whether that plane holds an IEC 62443-4-2:2019 SL-C evaluation, so an underwriter can set a

per-fleet accumulation cap. This attribute is descriptive, not scored, until a fleet-loss denominator exists (VRS-GEN-202 §8).

9 Protocol references

- **VRS-MAR-201** — Marine & Subsea AR Assessment Protocol (scoring) — dated reference at assessment time; its data twin is **VRS-MAR-501**.
- Marine Test Protocols (**VRS-MAR-1xx**) are reserved; the first candidates are a loss-of-comms-behaviour protocol and a pressure-cycle-endurance protocol, drawing on the IEC 60945:2002 environmental methods and ASTM F2541-06 autonomy construct rather than duplicating them.

10 Worked example (informative) — applicability walkthrough

The following illustrates how an assessor applies Clauses 4–8 to a **hypothetical** model (illustrative only; VRS-GEN-006 §10).

Input. A manufacturer declares a work-class vehicle, model code **MAR-WC-01**, for two operation classes: **rov-tethered** (umbilical-powered inspection to 1,000 m) and **auv-free** (free-swimming survey to 1,000 m). It holds an ABS UUV class survey report, a pressure/hyperbaric certificate to 1,200 m (declared envelope 1,000 m with margin), an IEC 62443-4-2:2019 SL-2 evaluation of the topside link, and 8,000 mission-hours with 2 recorded loss-of-comms events (both resolved by the loss-of-comms fallback) and 0 vehicle losses, plus 400 L&R evolutions with 1 minor deck injury.

Step 1 — capability gate and applicability (Cl. 4). The model has a declared submersion rating, so the MAR gate is passed and 4.2 applies; the manufacturer declaration makes MAR applicable. The envelope records classes **rov-tethered** and **auv-free**, each with its exposure envelope (maximum depth 1,000 m, sea-state envelope, tether class per 4.4).

Step 2 — hazard coverage (Cl. 5). H1–H6 all apply. For H1, recoverability (5.2) is assessed from the 1,000 m depth and the vehicle’s buoyancy-release recovery provision: a loss at 1,000 m is treated as potentially unrecoverable (total-loss severity), not a repair.

Step 3 — anchor / class-rule conformity (Cl. 6.2 → VRS-MAR-201 MAR-1). The ABS UUV class survey report evidences class-rule conformity for both subsea classes, so MAR-1 scores in its upper range; had conformity not been evidenced, MAR-1 would score zero without withholding a letter.

Step 4 — envelope check (Cl. 6.3). Both classes are operated within their permitted subsea envelope, so no envelope contraction applies (VRS-MAR-201 §4.3/§4.4). (Had a **usv-surface** class been declared, its collision-avoidance case would be mapped to COLREGs 1972 per 5.3.)

Step 5 — sufficiency (Cl. 7.3). 8,000 mission-hours with 2 loss-of-comms events are checked against the VRS-MAR-501 prior minima and the VRS-GEN-012 §4 evidence bars; assume they clear the minimum count, so each model×class is **applicable** → **rated** at the tier its evidence supports.

Step 6 — loss-driver read (Cl. 8). Loss-of-comms frequency is expressed as 2 events per 8,000 mission-hours = 0.25 per 1,000 mission-hours (H4). Deck-injury exposure is 1 injury per 400 L&R evolutions (H5). Recoverability (8.4) is read from the 1,000 m depth and recovery provision, surfacing a total-loss

severity floor for the underwriter. The topside link holds an SL-2 (not SL-C) evaluation, so 8.5 records the accumulation attribute below the target level.

Output. The rating is computed by VRS-MAR-201 (not in this document). The displayed sector letter is the lowest issued class letter (4.5). The Passport record carries the per-class letters, the operation classes and exposure envelopes, the evidence tier, the recoverability attribute, the H4 evidence notes, and the accumulation attribute. The numeric score and band boundary come from VRS-MAR-501 priors and are not asserted here.

11 Annex A (normative) — Continued-validity module (class-survey form)

A.1 A Marine rating is **maintained by survey**: it shall remain valid only while the periodic survey obligations of this Annex are met, and shall **lapse** otherwise (VRS-GEN-008 §5.2).

A.2 Obligations (cadence values are priors, VRS-GEN-202): (a) **periodic survey** — evidence refresh at most **12 months** old covering mission-hours, losses, and H2 integrity findings; (b) **special survey** — at most every **5 years** (prior from class-society practice), a deeper re-verification of pressure-boundary and control-system integrity; © **prompt-report events** — a loss at sea, a pressure-boundary failure, or a collision with a vessel shall be reported to the registry within the window defined in VRS-GEN-008 §7. Unreported known events shall void the rating for cause.

A.3 A lapsed rating shall be displayed as lapsed (never silently as current) and shall re-enter via evidence refresh, not re-assessment from zero, where the lapse was administrative and the mission-hour and occurrence record remains within the sufficiency window (§7.3).

12 Bibliography

- ISO 8373:2021, Robotics — Vocabulary (iso.org/standard/75539.html) — robot-term basis.
- ABS Rules for Building and Classing Underwater Vehicles, Systems and Hyperbaric Facilities (eagle.org; 2014/2020/2021 editions + 2026 notices confirmed; AUV section present, numbering edition-dependent) — subsea class floor.
- DNV AROS class notations (Autonomous and Remotely Operated Ships, 2025 launch; dnv.com) — **usv-surface** framework notation.
- IMO International Code of Safety for Maritime Autonomous Surface Ships (MASS Code), non-mandatory, adopted MSC 111, 22 May 2026 (effective 1 July 2026; mandatory Code targeted 1 January 2032) (imo.org autonomous-shipping) — surface-autonomy regime; subsea excluded.
- COLREGs — Convention on the International Regulations for Preventing Collisions at Sea, 1972 (in force 1977; imo.org) — USV collision-avoidance basis (H3).
- IEC 60945:2002, Maritime navigation and radiocommunication equipment and systems — General requirements — Methods of testing and required test results (Fourth edition, incl. Cor.1:2008; webstore.iec.ch/en/publication/3959) — H2 environmental/type-test lane.
- IEC 61508:2010, Functional safety of electrical/electronic/programmable electronic safety-related systems (Second edition, parts 1–7; webstore.iec.ch/en/publication/5515) — H3/H4 control-function SIL lane.

- IEC 62443-4-2:2019, Security for industrial automation and control systems — Part 4-2: Technical security requirements for IACS components (SL-C; FR1–FR7) — H4 cyber lane.
- ISO 14224:2016, Petroleum, petrochemical and natural gas industries — Collection and exchange of reliability and maintenance data for equipment — H5/H6 maintenance-record lane.
- ASTM F2541-06, Standard Guide for Unmanned Undersea Vehicles (UUV) Autonomy and Control (fixed designation F2541; [astm.org](https://www.astm.org)) — H4 autonomy-mode declaration lane.

13 Change history

DATE	VERSION	STATUS	CHANGE	AUTHORITY
2026-09-05	0.1	Draft	Initial draft — capability gate (water operation); continued-validity in class-survey form incl. special survey; regime-immaturity fact recorded	CEO goal 2026-09-05
2026-09-12	0.1ε1	Draft	COHERENCE: retired 5 bare CALIBRATION-PENDING markers (Foreword, §6.1, §6.2 cap placement, Annex C.2 cadence + special-survey prior) → VRS-GEN-202 stage prior labels, matching the GEN-005 (Run #31)/FLD-001 (Run #39) precedent. Editorial only — no constant, threshold, cap, or requirement changed.	Curator Run #55; charter COHERENCE
2026-09-13	0.2	Draft	DEEPEN: brought to publishable depth on the VRS-AER-001 v0.2 (Run #123) exemplar. Regime update (verified 2026-09-13): recorded the IMO non-mandatory MASS Code (MSC 111, 22 May 2026; mandatory targeted 1 Jan 2032) for usv-surface , noting subsea AUV/ROV remain outside it. Added dated anchors ISO 8373:2021, IEC 60945:2002, IEC 61508:2010, IEC 62443-4-2:2019, ISO 14224:2016, plus COLREGs 1972 and ASTM F2541-06. Added Cl. 8 loss-driver mapping (recoverability/total-asset-loss-at-sea as the sector-defining driver; fleet-cyber accumulation), Cl. 7.2 evidence-reuse table, Cl. 10 worked applicability example, expanded terms/units (mission-hours, m, m/s, per 1,000 mission-hours, L&R evolution, months), and Cl. 4.4/4.5/5.2–5.4/6.2–6.4 requirements. Bibliography 2→10 dated entries. Net 923→3,791 words; shall 6→56. No requirements deleted; no constant set or changed; MAR-501 twin untouched.	Curator Run #131; charter DEEPEN
2026-09-14	0.2ε1	Draft	REFACTOR (with VRS-AER-001): editorial cross-referencing of restatements to their single home (VRS-GEN-004 §4.2; meaning unchanged, requirements preserved at home). §4.1/§4.2→GEN-007 §5.1 + GEN-006 §5; §4.4/§4.5→GEN-006 §8.3; §6.1 + Foreword + §2→GEN-006 §4.1/§8.1/§10, GEN-002 §7.3. No constant/anchor/table/example changed; MAR-501 untouched. Net 3,791→3,786; shall 56→48; home-less duplication logged to design-questions.	Curator Run #158; charter REFACTOR
2026-09-16	1.0	Draft	REWRITE (VRS 2026, Batch C): recast §6.1 to “AR determined per VRS-MAR-201, letters per VRS-GEN-006 §4”; §6.2 class-rule-fit cap → pointer to criterion	Curator Run REWRITE;

DATE	VERSION	STATUS	CHANGE	AUTHORITY
			MAR-1 (large range, no gate; zero on absent conformity, not a gate); §6.3 regulatory-fit gate → envelope contraction per VRS-MAR-201 §4.3/§4.4 (not a criterion); deleted §6.4 (GEN-201 cold-start). Removed retired forms: confidence band (§7.3/§7.4/§8.3/§10), provisional flag, cold-start/GEN-201 (§2, §6.4, §7.3, §10, Annex A), assessed-unrated (§7.3, Annex), stage prior markers (Foreword/§6/§7/Annex), “capped at B” (§6.2/§7.4/§10) → tiers + evidence bars + company-wide fallback (GEN-005 §6). Deleted cold-start Annex A; renumbered continued-validity Annex C → Annex A. Worked example re-run against the recast clauses. No criterion invented/renamed; no constant changed; MAR-501 regenerated by the dispatcher. See GEN-005 §6.	charter REWRITE

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