



FIRST EDITION

IAF AUTOSAFE

Vehicle Testing Assessment and Labelling System

Initial production assessment
Configuration based label authorization

DRAFT FOR TECHNICAL REVIEW

Technical validation and formal adoption are required before operational rating issue. Release conditions are set out in Annex F.

International Automotive Federation

English master text

iaf.com

Publication identity

IAF AUTOSAFE First Edition

Vehicle Testing Assessment and Labelling System

International Automotive Federation

English master text

www.iaf.com

Scope of this publication

This publication sets out the vehicle assessment system, the proposed A to F classification framework and the records supporting an initial production assessment. It includes requirements for emerging vehicle technologies and the conditions for technical release.

Status and operational use

Development proposal for technical review. Not an adopted standard and not authorization to issue vehicle ratings. Technical validation and formal adoption are required before operational use. The release conditions in Annex F apply.

Assessment record

The certificate records the identified production configuration and has no calendar expiry. Safety-relevant technical changes and evidence affecting a result are handled through the configuration and event-triggered rules in this edition.

Reading and navigation

The contents link to the main clauses and annexes. Clause and criterion identifiers remain the reference points for assessment work. A class describes performance within the assessed conditions; it is not a guarantee of survival or freedom from injury.

Contents

Select a section to navigate to it.

Purpose and system architecture	5
1 Scope and assessment object	5
2 Governing documents and interpretation	6
3 Definitions and record statuses	7
4 Initial production issue model	8
5 Responsibilities and independent decisions	8
6 Vehicle identity and family coverage	9
7 Applicability and exclusions	10
8 Sample selection and custody	10
9 Assessment plan and test envelope	11
10 Laboratory execution and measurement quality	11
11 Evidence acceptance and traceability	12
12 Scoring and A to F classification	12
13 Mandatory gates and class caps	14
14 Safe driving and human factors	15
15 Crash avoidance	16
16 Frontal protection and vehicle compatibility	16
17 Side rear rollover and multiple event protection	17
18 Occupant diversity and child protection	17
19 Vulnerable road user impact protection	18
20 Energy electrical and fire safety	18
21 Functional safety and intended function safety	19
22 Cybersecurity and software integrity	20
23 Post crash rescue and escape	20

Contents continued

Select a section to navigate to it.

24 Initial production equivalence	21
25 Evidence quality and reproducibility score	21
26 Technical changes and focused reassessment	22
27 Certificate and assessment report	23
28 Label design and permitted use	23
29 Event triggered review and result correction	24
30 Complaints appeals and confidentiality	24
31 Independent class definition and protected vehicles	25
32 Technical adoption and operational release	26
33 Technology applicability and extensibility	26
34 Automated driving and remote operation	27
35 Artificial intelligence and learning systems	29
36 Connected services and resilient software architecture	30
37 Emerging energy systems structures and materials	30
38 Virtual evidence digital twins and scenario validation	31
39 Evolving cabins accessibility and novel interfaces	33
Annex A Proposed criterion point schedule	34
Annex B Controlled test protocol pack	37
Annex C Operational forms and record requirements	39
Annex D Worked application decisions	44
Annex E Stakeholder safeguards	46
Annex F Technical release register	47
Annex G Technical evidence and reference register	49
Annex H Technology applicability and evidence matrix	50

Purpose and system architecture

IAF AUTOSAFE is a vehicle test, assessment and labelling system. It records the performance of an identified vehicle design in its initial released production configuration. The resulting document is a Vehicle Test and Rating Certificate, supported by a technical report and an A to F label. It is issued for a defined vehicle configuration family, not for a manufacturer's management system and not by destructive testing of every individual vehicle.

The certificate has no calendar expiry date. Continued use of its label depends on the identity of the vehicle and the accuracy of the supporting evidence. Passage of time, a model-year name change, ownership transfer or continued manufacture of an unchanged configuration does not create a renewal obligation. A safety-relevant change, a new vehicle generation or evidence that undermines the result may require a focused technical review. These are event-triggered actions, not a recurring certification cycle.

The system defines its own assessment areas, class boundaries, mandatory gates and production-release rules. It covers conventional vehicles and emerging architectures through a common core and controlled technology-specific methods. A new technology receives credit for demonstrated safety performance, not for novelty. Numerical class thresholds and weights remain subject to technical validation; they do not express injury probabilities.

The standard's purpose is to improve protection and make its limits understandable. No vehicle test can demonstrate immunity from every collision, fire or hostile attack. AUTOSAFE shall describe the conditions tested and the findings obtained. It shall not promise survival, absence of injury or universal resistance to weapons.

How to use this edition

Clauses 1 to 32 define the assessment system and vehicle-safety requirements. Clauses 33 to 39 specify technology applicability, automated driving, artificial intelligence, connected architectures, emerging energy and structures, virtual evidence and evolving cabins. Annex A contains the proposed point schedule. Annex B defines the named test protocols. Annex C supplies operational record formats. Annex D contains worked decisions. Annex E records stakeholder safeguards. Annex F establishes the technical release conditions. Annex G governs technical references and evidence provenance. Annex H maps emerging technologies to assessment domains.

In the proposed requirements, “shall” means mandatory, “should” means recommended, and “may” means permitted. Those words describe the intended adopted system; they do not convert this development document into an approved certification instrument.

1 Scope and assessment object

1.1 This system shall evaluate complete road vehicles through controlled physical tests, permitted simulation, technical evidence review and examination of production representativeness. It shall assign a qualifying A to E class only where the applicable assessment programme is complete and its evidence is valid. A valid adverse F finding shall be reported under Clause 12.5.

1.2 The initial technical profile shall cover passenger cars in category M1. A light commercial vehicle profile for N1 shall use the same administrative system but shall not enter service until its loading, seating, cargo, crash and comparison rules are separately validated and released. Other vehicle categories require their own

published profile. A common brand name does not justify applying passenger-car thresholds to buses, heavy trucks or motorcycles.

1.3 The rated object shall be a named vehicle generation and a controlled set of configurations. Coverage shall identify body structure, drive side, seats, powertrain, energy storage, mass range, restraint systems, relevant hardware, software and sales market. A manufacturer, brand, factory, platform or supplier shall not receive a whole-vehicle A to F class merely because one vehicle is rated.

1.4 Component and service test reports may support a vehicle assessment. A battery, airbag controller, ADAS calibration service or test laboratory shall not display a whole-vehicle AUTOSAFE class as its own product rating. A separate component or service scheme requires its own rules and mark.

1.5 Evaluation shall address occupants, other road users and rescuers. Increased protection for the evaluated vehicle shall not justify unacceptable harm to an impact partner, pedestrian or cyclist.

1.6 Applicable legal requirements remain separate. AUTOSAFE shall not be presented as permission to place a vehicle on a market, a replacement for type approval or an endorsement by a regulator. Legal compliance evidence is an eligibility input, not a substitute for performance testing.

2 Governing documents and interpretation

2.1 Every assessment shall use a controlled assessment specification containing this system edition, the vehicle-category profile, the dated protocol revisions, technical bulletins, measurement decision rules and label rules. References shall be fixed before testing. A general instruction to use whatever edition is latest shall not replace an identified technical basis.

2.2 Applicable law takes precedence. Within AUTOSAFE, the adopted system governs administrative decisions; a category profile defines vehicle-specific application; the released test protocol defines the measurement and acceptance rule. A conflict shall be resolved in a published interpretation before the affected result is decided.

2.3 Candidate reference families include UN vehicle regulations relevant to the market and vehicle category, ISO 26262 for functional safety, ISO 21448 for intended-function safety, ISO/SAE 21434 for cybersecurity engineering, ISO 17840 for rescue information and ISO/IEC 17025 for laboratory competence. The controlled reference register shall identify the exact edition, applicable part, purpose and lawful access route before a compliance claim is made.

2.4 A referenced quality or process standard shall not itself prove crash performance. Nor shall one process certificate demonstrate competence for every test method. Claims about accreditation shall identify the accreditation body, laboratory and relevant scope.

2.5 Engineering publications and laboratory methods used as supporting evidence shall retain their provenance and any applicable intellectual-property restrictions. IAF shall secure necessary use permissions. AUTOSAFE class decisions shall be determined exclusively by the released AUTOSAFE requirements and shall not be inferred from an external certificate or summary result.

2.6 An ambiguity affecting a score or class shall be recorded as a technical query. The applicant and laboratory shall not resolve it privately through a more favourable interpretation. IAF shall issue a reasoned interpretation applicable to all materially similar cases and record any effect on earlier results.

2.7 The system document shall be identified as IAF AUTOSAFE First Edition. Supporting protocols shall use that identity followed by a descriptive subject title, their controlled revision and release date. Clause

numbers, criterion identifiers and individual test-record identifiers provide traceability; they are not additional standard numbers.

3 Definitions and record statuses

Term	Meaning within this system
Initial production configuration	Released specification intended for customer supply, with controlled safety hardware, software and manufacturing identity.
Production baseline	The signed configuration record against which samples and label-bearing vehicles are matched.
Configuration family	Explicitly listed variants covered by physical evidence or an approved technical equivalence decision.
Certificate	Vehicle Test and Rating Certificate recording a completed assessment and its covered configurations.
Label authorization	Permission to apply the class mark to vehicles and materials within the recorded scope.
Protocol edition	Fixed method and scoring basis of the assessment; not a certificate expiry date.
Critical gate	A specified condition that restricts or prevents a favourable class regardless of aggregate points.
Assessment envelope	Declared conditions, occupants, loads, speeds, geometries, environments and system states included in an assessment.
Delta assessment	Focused review and testing of changes relative to an existing baseline, including interaction effects.
Material safety change	Change capable of altering rated behaviour, exposure to a hazard, test applicability or a critical-gate outcome.
Production mismatch	Labelled vehicle that does not match the covered baseline or an approved extension.
Unrated	No complete, valid AUTOSAFE classification for the identified configuration. Not equivalent to Class F.
Suspended label authorization	Temporary restriction on use of the mark while a material issue is investigated.
Corrected result	A result amended because an error or invalid assumption affected the original decision.
Superseded configuration	Configuration replaced by a separately identified design or assessment; the historical record remains accessible.
Retired production	Manufacture of a covered configuration has ended; existing vehicles retain their historical test identity.
Protected designation P	Separate, threat-specific protective assessment in addition to a road-safety class.

3.1 A to F shall describe assessed performance. “Unrated”, “under assessment”, “suspended” and “withdrawn” shall describe record or authorization status. They shall not be silently converted into a low performance class.

3.2 “Certificate remains a historical record” does not mean that an individual used vehicle is free from damage, deterioration, non-equivalent repair or an unresolved safety defect. The public record shall distinguish original assessed capability from current individual condition.

4 Initial production issue model

4.1 An applicant shall submit a released production baseline and representative samples. The system shall assess that baseline once through the defined initial programme. After valid tests, independent review and a recorded decision, IAF may issue the certificate and authorize the corresponding label.

4.2 A prototype may be used for engineering development. A prototype result shall not be issued as an unrestricted production rating. If a production-intent sample is tested, IAF shall close every production-representativeness difference before issue through evidence, inspection or additional testing proportionate to its effect.

4.3 The certificate shall state the issue date, protocol edition and first covered production boundary. It shall not contain an automatic expiration field or a scheduled renewal requirement. The absence of an expiration field shall not be marketed as permanent protection of every future version.

4.4 A manufacturer may apply the label to subsequent production units only where each unit maps to the covered configuration record. The system shall not require every unit to undergo the destructive test sequence. The manufacturer remains responsible for truthful configuration matching and manufacturing conformity.

4.5 The system shall impose no scheduled recertification, fixed-cycle reassessment or routine surveillance audit as a condition of the original result. It shall retain event-triggered investigation, correction and targeted testing when a change, mismatch, defect, credible complaint or invalid result is identified.

4.6 A new model-year designation alone shall not trigger testing. Conversely, unchanged marketing names shall not conceal changed structures, restraints, battery packs or control software. Safety identity, not the marketing calendar, shall determine coverage.

4.7 An updated IAF protocol shall not retrospectively erase an accurately reported earlier test result. A new initial assessment shall use the released basis applicable to that programme. Earlier labels shall retain their edition. Cross-edition comparisons require a published comparison method.

4.8 Production ending, unused stock, a later registration date or resale shall not create an artificial expiry. A successor vehicle shall receive its own baseline and decision. Evidence from a predecessor may be reused only through a documented applicability review.

5 Responsibilities and independent decisions

5.1 The applicant shall identify the legal entity responsible for the vehicle, provide complete technical information, disclose all covered variants, authorize access to test evidence, identify known relevant defects and accept publication rules before the programme starts.

5.2 The laboratory shall control the sample, preparation, instrumentation, test execution and original data. Manufacturer representatives may observe and identify factual preparation concerns. They shall not change settings, select favourable measurements or veto a valid result.

5.3 The technical reviewer shall verify scope, evidence validity, applicability decisions, scoring and gates. The reviewer shall not approve work where a conflict of interest compromises independence.

5.4 A separate decision authority shall approve the public class and its coverage. No person shall approve their own test execution as the sole basis of the final rating. Decisions for A and B shall include independent review of crash biomechanics, energy hazards and the claimed extended assessment envelope.

5.5 The scheme owner shall maintain controlled rules, competent reviewer appointments, interpretation records, the verification register and a complaints route. Commercial membership, sponsorship, purchase of other IAF services or payment of a higher fee shall not improve a class or exempt a critical requirement.

5.6 Charges shall relate to defined work. A refusal to pay for unrelated services shall not change an established technical result. A sponsor shall not suppress a complete valid low result through withdrawal after testing. Incomplete programmes shall be published only with their incompleteness clearly identified under agreed disclosure rules.

5.7 The public shall receive the class, scope, edition, limitations, gate findings and current record status without having to purchase the technical standard. Detailed commercially sensitive design information may remain restricted, but secrecy shall not conceal an adverse finding necessary to interpret the label.

6 Vehicle identity and family coverage

6.1 The baseline shall record make, model, generation identifier, platform revision, body style, drive side, market, seats, intended use, production site, released bill of materials and production-release authority. A name shared with another vehicle is insufficient identity.

6.2 Safety-sensitive details shall include structure and joints, crash load paths, restraint and airbag versions, seats and anchorages, glazing and latches, steering and brakes, wheels and tyres, laden and unladen mass envelopes, centre-of-gravity assumptions, energy system, sensors and safety-related software and calibration identifiers.

6.3 The manufacturer shall provide the population of proposed variants and a hazard-based worst-case rationale. The heaviest vehicle shall not automatically be the worst case for every test. Differences in stiffness, ride height, loading, restraint tuning and geometry shall be examined separately.

6.4 A family may contain variants with different individual domain results. The common family label shall use the least favourable supported domain result and applicable gate across all covered variants. Combining best results from different variants to create an unrepresentative common label is prohibited.

6.5 Variants deserving different classes shall receive separate coverage entries and unambiguous labels. A high-grade optional package shall not confer its grade on the base vehicle. Sales-volume percentages shall not excuse labelling an unequipped minority as if it carried the tested package.

6.6 Right-hand and left-hand drive, different seating rows, body derivatives, battery capacities and country-specific restraint or ADAS configurations require evidence of coverage. Geometry, software and occupant differences shall be evaluated, not presumed equivalent.

6.7 The production boundary shall use an unambiguous VIN rule, build code, sequence boundary or controlled configuration identifier. Where a public VIN service would expose personal data, it may return the relevant configuration and rating without publishing owner identity or individual travel data.

7 Applicability and exclusions

7.1 Before testing, IAF shall approve a requirement-by-requirement applicability matrix. Each entry shall be required, covered by an approved equivalent method, or not applicable under an explicit profile rule. Missing evidence shall be recorded as missing evidence, not as an exclusion.

7.2 Absence of a safety feature shall normally receive the points assigned to absence by the protocol, often zero. It shall not reduce the scoring denominator. A manufacturer cannot improve a percentage by omitting AEB, child detection or another assessed capability.

7.3 A physically absent hazard may be not applicable. For example, a vehicle without a traction battery does not undergo that battery's propagation test. Its energy-safety domain shall nevertheless follow the approved fuel or other energy branch. The assessor shall not redistribute points at discretion.

7.4 All complete category profiles shall maintain the published total and domain maxima. Branches for powertrain or vehicle category shall be defined and validated by IAF before use. A profile with no approved scoring treatment for an exclusion shall be withheld from operational rating.

7.5 No discretionary exclusion may remove occupant survival, restraint integrity, relevant energy hazards, road-user harm, rescue access or evidence integrity. A required test that cannot be executed shall block the affected classification until an approved equivalent is available.

7.6 An equivalence decision shall state the requirement, reason, physical mechanism, evidence and uncertainty. It shall be approved by a reviewer independent of the applicant. The public scorecard shall disclose material limitations without revealing protected design details.

8 Sample selection and custody

8.1 IAF shall control sample selection. For a launch vehicle not yet on sale, samples may be selected from released production under witnessed access. Retail purchase shall be an option where customer vehicles are available, not an impossible prerequisite to an initial-production assessment.

8.2 The sample plan shall specify the variants, individual tests, destructive-test allocations, spare samples, repeat policy and permitted reuse. The number of vehicles shall be derived from protocol coverage and validation needs; no universal sample count shall be claimed sufficient for every programme.

8.3 Every sample shall have a custody record containing identifier, acquisition route, configuration, condition, transport, receipt, seals, preparation actions, software state and responsible persons. Chain-of-custody breaks shall be investigated before evidence is accepted.

8.4 Normal pre-delivery preparation is permitted if recorded. Non-production reinforcements, hand-selected restraint parts, unapproved tyre changes, test-specific calibrations and undisclosed software modes are prohibited. The laboratory shall preserve before-and-after evidence of relevant settings.

8.5 Laboratories shall isolate test functions from unauthorized remote changes. If connectivity is part of the evaluated function, the test plan shall preserve necessary operation while recording remote commands, updates and configuration changes.

8.6 Test damage shall not contaminate later results. Reuse of a vehicle, seat, battery, sensor or restraint shall be permitted only where the protocol explicitly allows it and prior loading cannot bias the later measurement. Cosmetic appearance alone shall not establish suitability for reuse.

9 Assessment plan and test envelope

9.1 The signed plan shall allocate each scored criterion and gate to a released method, identified sample, evidence type, responsible laboratory and acceptance rule. The plan shall identify all data needed to reproduce the score and the method for resolving an invalid test.

9.2 Core tests shall evaluate the adopted baseline scenarios. Robustness tests shall vary parameters within a controlled scenario set. Extended-severity tests for A and B shall test a separately validated protection envelope. “Higher severity” shall not mean simply increasing speed without validating the method or the biomechanical interpretation.

9.3 Impact speed, angle, overlap, barrier construction, partner mass, ride height, vehicle loading, occupant posture and restraint condition shall be defined together. Test reports shall not equate different collision configurations solely because their displayed speeds match.

9.4 Avoidance tests shall specify target properties, trajectories, road friction, visibility, illumination, weather, sensor condition, controller state and driver input. Required scenarios shall be selected from a controlled coverage model rather than by manufacturer preference.

9.5 Physical tests shall anchor the major injury and structural claims. Simulations may extend coverage only under a released validation procedure. A simulated result shall remain identifiable as simulated and shall not be shown as a physical crash result.

9.6 Changing the plan after a result is known shall require a reasoned independent decision. Adding a more favourable test shall not erase a valid unfavourable test. Revisions shall preserve the original plan and evidence history.

10 Laboratory execution and measurement quality

10.1 The laboratory shall demonstrate competence for the actual method, facility and equipment used. An accreditation claim shall be checked against the relevant scope. Where a new method is not yet accredited, IAF shall document method-specific competence and shall not describe it as accredited testing.

10.2 Instrumentation, dummies, impactors, sensors, acquisition systems, calibration status and environmental controls shall satisfy the selected protocol. The laboratory shall record sensitivity, sampling, filtering, synchronization, zeroing and channel acceptance rules.

10.3 The test report shall retain raw channels, processed data, algorithm versions, imagery, event timing, preparation records and deviations. Replacement of raw data with plots alone is insufficient for review of an injury metric or a disputed score.

10.4 Each test shall receive a validity decision separate from its performance result. A valid low score is not an invalid test. An execution failure shall identify the affected channels and whether the missing information prevents scoring or a gate decision.

10.5 The uncertainty model shall account for significant measurement, setup and processing effects. Class decisions near a boundary shall use the predeclared guard-band or repeat rule. The laboratory shall not choose a favourable uncertainty convention after the result is known.

10.6 An exact repeat under an approved repeat rule shall use the rule's prescribed combination of results. A redesign shall create a new configuration decision; it shall not be described as repeatability testing of the original unchanged vehicle.

11 Evidence acceptance and traceability

11.1 Every requirement shall link to an evidence identifier, baseline identifier, method revision, test date, reviewer and decision. An evidence register shall distinguish witnessed physical tests, independently executed tests, validated simulation, manufacturer data and documentary assertions.

11.2 Existing laboratory reports may reduce duplicated testing where authenticity, technical equivalence, sample identity, data access, uncertainty and method coverage are established. Only verified underlying measurements may support the corresponding AUTOSAFE criterion. A certificate summary shall not substitute for required test evidence or determine the class.

11.3 Evidence shall not be rejected solely because it is old. The reviewer shall examine method relevance, traceability, actual design change and the integrity of the underlying data. Conversely, a recent date shall not excuse evidence from a different configuration.

11.4 The applicant shall authorize the necessary report use and access. If proprietary restrictions prevent verification of a mandatory gate, that gate remains unresolved. Commercial confidentiality cannot be treated as a technical pass.

11.5 Evidence shall be retained for as long as IAF represents the result as verifiable, subject to lawful retention and archival arrangements. The retention model shall include controlled access, backups, integrity checks and recovery. This is a record duty, not a periodic retesting obligation.

11.6 Manufacturer evidence is permitted only for the uses defined in the protocol. Documentary evidence may confirm a production part identity; it shall not create physical crash-performance points where a required measurement is absent.

12 Scoring and A to F classification

The following weights and boundaries are independent AUTOSAFE design choices subject to validation. They are not injury probabilities, percentages of survival or predictions of fatalities. Annex F prohibits their use for public ratings until the complete scoring and test package is released.

Domain	Assessment area	Maximum points
D01	Safe driving and human factors	70
D02	Crash avoidance	120
D03	Frontal protection and compatibility	140

Domain	Assessment area	Maximum points
D04	Side rear and rollover protection	110
D05	Occupant diversity and child protection	90
D06	Vulnerable road user impact protection	80
D07	Energy electrical and fire safety	100
D08	Functional and intended function safety	70
D09	Cybersecurity and software integrity	50
D10	Post crash rescue and escape	90
D11	Initial production equivalence	50
D12	Evidence quality and reproducibility	30
TOTAL	Complete assessment	1000

12.1 The score for a domain shall be the sum of its criterion points after all protocol modifiers, bounded by zero and the domain maximum. Each criterion shall have a released scoring function, input definition and modifier rule. An assessor shall not invent intermediate percentages from qualitative judgement.

12.2 The domain percentage shall equal its awarded points divided by its maximum, multiplied by 100. The total shall equal the sum of all twelve domain points. Neither missing features nor discretionary exclusions shall shrink the denominator.

12.3 The final class shall be the highest class for which the total threshold, every domain floor, all applicable common gates and all class-specific gates are simultaneously satisfied. Failure of one condition restricts the class even where the total is high.

Class	Proposed total minimum	Proposed floor in every domain	Permitted description
A	920	85 percent	Highest AUTOSAFE class within the stated assessment envelope
B	850	75 percent	Enhanced protection with additional validated test requirements
C	760	65 percent	Advanced protection under the AUTOSAFE core and robustness programme
D	650	55 percent	Intermediate assessed performance with disclosed limitations
E	500	40 percent	Lowest qualifying assessed performance class
F	Below E conditions or a valid common gate failure	Not a qualifying floor	Assessed performance below the qualifying E threshold or a specified critical failure

12.4 An unrated vehicle shall not receive F merely because it has not applied, lacks a report or is still under assessment. A deliberate evidence-integrity breach shall block issue or invalidate affected evidence; it shall not be disguised as a measured F performance result.

12.5 Class F shall be an adverse assessment result, not an approval mark. Where a valid common-gate failure establishes F before the full programme is complete, the public report shall identify that failure, disclose incomplete areas and omit an invented total score. Complete valid low-performing assessments may publish their measured total.

12.6 Internal calculations shall retain full precision. Threshold decisions shall use unrounded values. Public totals and percentages may be displayed to two decimals but shall never be rounded upward to cross a class boundary. The scorecard shall state this rule.

12.7 No transfer of surplus points between domains is permitted. A performance limitation may incur a points modifier and a gate cap only where both are explicitly specified; the protocol shall state whether they address different consequences and prevent accidental duplicate penalties.

12.8 Optional technology shall not obtain credit solely because it exists. The performance and fitment rules apply. Demonstrated capability and verified protection shall determine points, with technology-neutral routes where the same safety outcome can be achieved differently.

13 Mandatory gates and class caps

13.1 A gate is an independently recorded pass, fail or unresolved condition. A gate with no released acceptance method is unresolved, not implicitly passed. Common gates apply to E and above. Higher-class gates impose additional limits for C, B or A without weakening the common gates.

Gate	Common requirement and decision effect
G01	Valid and authentic evidence. Unresolved authenticity blocks issue; invalidity triggers evidence withdrawal rather than an invented score.
G02	Sample and production identity. Unresolved mismatch blocks coverage of the affected configuration.
G03	Survival space and structural integrity. Failure of the released core limit produces an adverse F result.
G04	Restraint integrity and ejection control. Specified core anchorage, retention or deployment failures produce F.
G05	Critical injury ceilings. Exceedance of the released common limit for a specified occupant and body region produces F.
G06	Energy containment and isolation. A defined core-test fire, shock or uncontrolled release failure produces F.
G07	Safe intervention. A defined unacceptable dangerous actuation or loss-of-control failure produces F.

Gate	Common requirement and decision effect
G08	Post-crash escape and rescue. Failure of the released essential escape or access conditions produces F.
G09	Child protection. Failure of the released common child injury or restraint integrity requirement produces F.
G10	Complete scope and public accuracy. Missing mandatory scope evidence blocks issue; deceptive use restricts label authorization.

13.2 C and above shall satisfy the AUTOSAFE core and robustness test programme, the released advanced body-region limits and the Class C structural, compatibility, energy and rescue conditions. Passing only the total and domain floors does not establish C. A poor injury region shall be evaluated under an explicit class-cap rule, not averaged away.

13.3 B shall satisfy its additional physical extended-envelope tests, occupant diversity checks, compatibility conditions, energy containment and escape requirements. A shall satisfy the more demanding released A test envelope and acceptance limits. The envelope and ceilings must be stated numerically in the protocol pack; adjectives alone cannot establish a pass.

13.4 Failure of an A-specific condition may cap a vehicle at B if every B requirement is independently met. Failure of a B-specific condition may cap it at C if every C requirement is met. A fundamental failure that also violates a common requirement cannot be downgraded to a benign class-specific failure.

13.5 A or B shall not require waiting for accumulated customer mileage or a future field-data milestone. The initial-production class shall be decided from the completed released test and assessment programme. Later defect evidence may trigger an issue-specific correction under Clause 29.

13.6 A and B do not mean injury-free or fatality-free operation. A separate protected-vehicle assessment is necessary for any ballistic or blast claim. Its outcome does not remove any road-safety gate.

14 Safe driving and human factors

14.1 Driver-state assessment shall cover the supervision required by the fitted assistance functions. The protocol shall test attention detection, distraction, drowsiness, warning escalation and response to an unresponsive driver. Detection of impairment shall not be described as a clinical diagnosis or an infallible sobriety test.

14.2 Required checks shall include representative stature, skin tone, eyewear, head position, illumination and permitted seating adjustment. False warnings, missed detection and recovery after sensing obstruction shall be reported separately. A favourable average shall not conceal a systematically excluded user group.

14.3 Essential controls shall be assessed for identification, reach, operation and visual demand. Hazard lights, indicators, demisting, wipers and emergency releases shall remain usable under foreseeable failure conditions. A functional outcome may be achieved by different interface designs if the released usability method supports the result.

14.4 Speed assistance and driver-support information shall be checked against actual road conditions and conflicting inputs. The system shall communicate material limitations without representing uncertain map or sign interpretation as certain authority to proceed.

14.5 An incapacitation response shall be tested for interaction with braking, steering, emergency communications and other road users. Stopping capability shall be bounded by its operational conditions. A claimed minimum-risk manoeuvre shall not receive credit merely for stopping in an arbitrary hazardous location.

14.6 The report shall include task outcomes, response times, missed and false indications, intervention quality and the tested user population. Reviewer observations shall follow predefined rubrics. Unstructured impressions alone shall not determine a numerical class.

15 Crash avoidance

15.1 The programme shall assess longitudinal, crossing, turning, junction, cut-in, cut-out, lane-departure, reverse and other profile-defined scenarios with relevant vehicles and road users. Coverage shall include powered two-wheelers where the approved scenario set identifies them.

15.2 Test outcomes shall distinguish complete avoidance, impact-speed reduction, delayed intervention, no intervention and dangerous intervention. The method shall specify how each outcome scores and how repeated attempts are combined. Selecting only the best attempt is prohibited.

15.3 Robustness shall address darkness, glare, rain or spray, occlusion, curve geometry, degraded road markings and sensor blockage within the released test conditions. The target and environmental tolerances shall be controlled so that results can be reproduced between laboratories.

15.4 Where a sensor is blocked or performance is degraded, the vehicle shall detect and communicate the limitation as required by the protocol. Recovery shall not silently restore a feature before the relevant sensing and calibration conditions are satisfied.

15.5 Lane-support and emergency steering tests shall examine stability, conflict with driver input and the risk of moving into another road user. False positive braking and steering shall be evaluated alongside successful interventions. Driver override shall be assessed in the context of the intended function.

15.6 Low-speed protection shall include the defined pedestrian, cycling and vehicle hazards during manoeuvring. Pedal misapplication mitigation and door-opening warnings shall be tested where they form part of the claimed protection package.

15.7 Absence, default deactivation, subscription dependence and configuration-specific limitations shall be reflected in fitment and scoring. A feature shall not earn base-vehicle points if it is unavailable in the labelled vehicle or requires a later optional activation.

16 Frontal protection and vehicle compatibility

16.1 The frontal programme shall define the required offset, full-width, limited-overlap and oblique loading cases. The adopted method shall specify barrier characteristics, speed, overlap, vehicle alignment, mass and occupant placement. No informal substitution between tests is permitted.

16.2 Structural assessment shall measure defined intrusion, deformation, joint failure and compartment stability. The safety objective is controlled energy management and an acceptable occupant loading environment, not absence of exterior vehicle damage. A stiffer or heavier body is not automatically safer.

16.3 Injury assessment shall cover the body regions and metrics specified for each validated dummy or human model. Applicable examples include head acceleration-based metrics, neck loads, chest response and

lower-extremity loads. Exact sensor definitions, filtering and risk functions shall be fixed in the protocol; this document does not invent universal injury limits.

16.4 Restraints shall be evaluated for belt routing, load limiting, pretensioning, airbag timing, submarining, hard contact and seat interaction. Rear-seat protection and other occupied positions included in the family shall receive their required evidence rather than an assumption based on the front driver seat.

16.5 Compatibility shall assess the vehicle's effect on a collision partner as well as its own occupants. The method shall account for geometry, load concentration, mass mismatch and relevant deformation measures. High self-protection shall not offset a failed compatibility gate.

16.6 B and A evidence shall address the released extended-severity conditions and transition behaviour beyond the core point. The report shall show the measured conditions, injury findings and remaining limitations. Successful completion shall not be represented as protection in every collision at that speed.

17 Side rear rollover and multiple event protection

17.1 Side protection shall include the approved near-side barrier, narrow-object and far-side methods. Assessment shall address head excursion, intrusion, chest and pelvic loading and restraint interaction. Where centre airbags or equivalent devices are credited, their performance shall be measured.

17.2 Occupant-to-occupant contact shall be considered in seating combinations specified by the profile. A system optimized for one occupant shall not be assumed effective for every adjacent occupant, seat position or body size.

17.3 Rear-impact assessment shall evaluate seat and head-restraint performance using the selected validated method. Static geometry and dynamic protection shall remain distinct evidence items; favourable geometry alone shall not establish dynamic injury mitigation.

17.4 Rollover assessment shall address retention, glazing, roof deformation, belt performance and occupant survival space under released conditions. A static roof-load test alone shall not be described as a complete dynamic rollover demonstration.

17.5 Multiple-event scenarios shall specify the sequence, damage state and timing of later loads. The protocol shall determine whether a restraint or energy-isolation system remains capable after an initial event. Unsupported assumptions that airbags or power systems can repeat their first-event function are prohibited.

17.6 Doors shall retain occupants when retention is required and permit escape when escape is required. The assessment shall distinguish premature opening, jammed release, inaccessible handle and failure of an electrical actuator. These are different failure mechanisms and shall be recorded separately.

18 Occupant diversity and child protection

18.1 The plan shall identify the range of stature, age-related vulnerability, seating positions and child restraint use represented by its evidence. The scope shall be limited to what validated physical or computational methods can support. Coverage shall not be described as universal human protection.

18.2 Physical anchors and validated models shall examine small, midsize and large occupants as required by the profile. Pregnancy, disability-related seating or unusually reclined positions shall not be claimed covered unless a specific validated method supports that claim.

18.3 Child-restraint assessment shall include installation, compatibility, anchorage, labelling, restraint orientation, airbag interaction and dynamic performance for the designated child configurations. A vehicle manual shall not conceal a material incompatibility behind a broad recommendation to seek further advice.

18.4 Occupant classification, airbag suppression and adaptive restraint functions shall be tested for relevant misclassification and out-of-position risks. If a function recognizes only part of the occupant range, the report shall identify that limitation and apply the protocol's treatment.

18.5 Child-presence detection shall be evaluated for its actual sensing and escalation capability. Tests shall distinguish direct detection from assumptions based on door or belt use. Heat-risk or emergency-response claims require evidence of the stated intervention and its dependencies.

18.6 D05 shall score diversity coverage and performance beyond the primary occupant cases allocated to D03 and D04. The criterion register shall identify the scoring owner for every outcome so that the same test performance is not inadvertently counted twice.

19 Vulnerable road user impact protection

19.1 The impact programme shall assess the head, pelvis and lower-extremity regions specified by the category profile. Test zones shall be mapped to the actual production exterior, including bonnet edges, windscreen regions and other relevant structures.

19.2 Active exterior protection shall be tested for detection, deployment timing, performance and non-deployment conditions. A claim based on a deployed mechanism shall not be assigned to normal production operation unless the trigger conditions are demonstrated.

19.3 The test protocol shall define how local poor zones limit the class. An attractive aggregate surface average shall not conceal an unacceptable region at a foreseeable impact location.

19.4 External accessories, tow-related equipment, decorative structures and armouring changes within the rated configuration shall be examined where they alter pedestrian or cycling injury risk. A base-body result shall not automatically cover a changed exterior.

19.5 D06 shall score passive and impact-activated protection. Avoidance outcomes involving vulnerable road users shall score in D02. Cross-domain gates may link the two, but the same avoided collision shall not be counted as both an impact result and an avoidance result.

20 Energy electrical and fire safety

20.1 The programme shall select the approved energy branch for combustion, hybrid, battery-electric, hydrogen or another supported propulsion system. Combinations shall address their interacting hazards. Absence of one fuel type shall not remove assessment of the energy system actually installed.

20.2 Post-impact assessment shall examine retention of energy storage, accessible electrical hazards, isolation, leakage, hazardous gas release, ignition, propagation and exposure of occupants or rescuers. The observation conditions and observation duration shall be specified by the hazard protocol; they are test parameters, not certificate validity periods.

20.3 Battery evidence shall specify chemistry, cell and module identity, enclosure, control software, state of charge, temperature, ageing condition and relevant mechanical history. Tests of a cell or a different pack shall not automatically establish the installed vehicle's containment and escape performance.

20.4 Thermal-event assessment shall address initiation, propagation, venting direction, occupant warning and the time available for the defined escape task. A warning by itself shall not demonstrate that the available interval is sufficient. Delayed and post-test hazards shall remain in the evidence record.

20.5 Charging tests shall cover the supported interfaces and functions, with required insulation, contact heating, fault response, water exposure and damaged-connector scenarios. Bidirectional power operation shall be included where it changes the hazard boundary.

20.6 Hydrogen or other pressure-system assessment shall identify containment, shut-off, pressure relief, leak detection and venting assumptions. Operation of a protective device shall be evaluated for secondary harm, not treated as an automatic pass merely because the device actuated.

20.7 Flood or immersion claims require dedicated methods for shock risk, release operation, communication and recovery. No submersion survival or escape claim may be extrapolated from a normal ingress-protection rating alone.

20.8 Containment, propagation prevention, warning and post-event isolation are distinct claims. The certificate shall identify which were demonstrated. Terms such as fireproof, non-flammable vehicle or explosion-proof shall not be used as unqualified summaries.

21 Functional safety and intended function safety

21.1 The applicant shall provide a vehicle-level safety argument linking relevant hazards to safety requirements, design measures and verification evidence. The review shall examine the configuration actually rated, not merely whether the manufacturer operates a documented process.

21.2 Malfunctioning behaviour and performance limitations without a hardware fault shall be distinguished. The analysis shall include interactions among perception, control, actuation, driver response and foreseeable misuse within the claimed function.

21.3 Credible faults and degraded states shall be exercised using the released fault-injection or equivalent method. The assessment shall record detection, transition to a safe or minimum-risk state and restoration conditions. Redundancy shall not be credited solely from a count of sensors or controllers.

21.4 Where functions depend on driver supervision, responsibility, limitations and takeover expectations shall be understandable and consistent across the interface, manual and marketing. A road-safety rating shall not be represented as authorization for unsupervised automated driving.

21.5 Automated operation without continuous driver supervision shall require the released operational-domain protocol and the evidence in Clauses 33 to 38. Active safety-relevant functions shall not be excluded merely to avoid assessment. If the necessary method is unavailable, the affected mode shall be demonstrably disabled in the rated configuration or rating issue shall be withheld for that configuration.

21.6 Simulated safety evidence shall identify model validity, scenario coverage, uncertainty and physical correlation. The number of simulated kilometres or scenarios alone shall not prove a specific injury or failure probability.

22 Cybersecurity and software integrity

22.1 The assessed baseline shall identify safety-relevant software, calibration and configuration, including cloud or external dependencies capable of altering the function. A generic operating-system version is insufficient where the safety calibration differs.

22.2 Evidence shall address unauthorized control, diagnostic access, update integrity, communications boundaries and credentials relevant to safe operation. Security testing shall be authorized, contained and appropriate to the evaluated interfaces. This standard does not authorize testing unrelated systems.

22.3 Update verification shall examine authenticity, integrity, power interruption, recovery and post-installation safety state. A rollback shall restore a compatible and safe configuration, not blindly reintroduce a known hazardous version.

22.4 Safety-relevant updates shall undergo the change decision in Clause 26. Security-only changes may avoid physical retesting if documented regression evidence demonstrates that safety performance and timing are unaffected. The manufacturer shall not label every update as administrative to bypass review.

22.5 Base-rating credit shall not depend on a paid ongoing safety subscription. Free-trial functions shall not be treated as permanently fitted capability. Dependence on network service, support withdrawal or feature deactivation shall be disclosed and assessed for its impact on the rated configuration.

22.6 A critical vulnerability or service change that could invalidate a rated function shall trigger an evidence-based incident review. It does not create an automatic new certificate cycle; it creates a specific obligation to determine whether the published claim remains accurate.

23 Post crash rescue and escape

23.1 Rescue assessment shall cover information, access, emergency release, hazard identification, energy isolation and necessary communications after the defined impact. Passing a normal-condition door-opening test shall not establish post-crash access.

23.2 Electrically operated releases shall be examined after loss of relevant power and after the specified deformation. Mechanical alternatives shall be identifiable and operable by the intended user under the released method. Their existence in a drawing or manual alone is insufficient.

23.3 Emergency communication shall be tested for the information claimed, its accuracy and delivery under the stated service conditions. The system shall disclose dependencies on network coverage, account activation and regional emergency infrastructure.

23.4 Rescue sheets and response guides shall match the exact vehicle and energy configuration. They shall identify hazardous components, safe access information and other content required by the chosen rescue-information method. They shall be available to responders without a commercial paywall.

23.5 The method shall assess post-crash escape where rollover, loss of power, smoke, thermal warning or immersion is within the claimed envelope. Test personnel shall use controlled facilities and approved safety procedures. The consumer label shall not encourage improvised hazardous trials.

23.6 Multicollision braking, hazard lighting, restraint status and preservation of emergency power shall be reviewed as interacting functions. Unintended immobilization or loss of escape capability shall be recorded even if the original crash-protection points are high.

24 Initial production equivalence

24.1 Before first issue, the applicant shall demonstrate that tested structures, materials, joining methods, restraints, energy storage and safety software match the released production design. The evidence shall identify the controls that prevent a labelled production unit from silently diverging from the tested baseline.

24.2 Initial examination may use production records, witnessed inspection, dimensional or material verification, supplier traceability and sample comparison. The method shall be proportional to the safety mechanism and the independence of the available evidence.

24.3 The manufacturer shall maintain its own release and conformity controls for labelled production. This duty shall not be converted into a scheduled IAF management-system audit. IAF review after issue shall be triggered by a material change or credible evidence of mismatch.

24.4 A new production site or critical supplier shall not automatically invalidate a design result. The applicant shall demonstrate equivalent output and relevant process capability before extending label use to the changed source. Failure to establish equivalence requires targeted investigation or testing.

24.5 Production discrepancies shall be bounded by the affected build population. The decision shall specify whether the issue affects the design result, particular units, the family scope or all label use. Unaffected variants shall not be restricted without a technical reason.

24.6 Test findings about wear, corrosion or repair sensitivity may be included where the protocol tests those conditions. They shall not create a calendar renewal requirement, nor imply that every individual aged or repaired vehicle has been inspected by IAF.

25 Evidence quality and reproducibility score

25.1 D12 shall evaluate the defined completeness, traceability and reproducibility characteristics of an otherwise admissible evidence package. It shall not award bonus points for submitting glossy documents or purchasing unrelated certificates.

25.2 Admissibility remains mandatory regardless of the D12 score. Authenticity, necessary raw data, valid methods and a reproducible critical-gate decision cannot be traded for points. A package may be admissible yet score differently for additional independently demonstrated reproducibility features specified by the released rubric.

25.3 The rubric shall distinguish essential validity checks from additional cross-checks. Examples of additional evidence may include independently reproduced calculations, correlation checks and documented repeatability results, provided that comparable routes exist for different manufacturers.

25.4 The reviewer shall run or independently verify the scoring calculation. Human overrides shall identify the source clause, reason, approving authority and resulting effect. An unexplained manual class change is prohibited.

25.5 Field-outcome statistics shall not be a launch prerequisite or a scored substitute for missing physical tests. Relevant later incidents may inform a targeted investigation or the development of improved protocols. An absence of reported crashes in a small fleet shall not be scored as proof of safety.

26 Technical changes and focused reassessment

26.1 The manufacturer shall assess a proposed change against the baseline before applying the original label to the changed vehicle. The record shall identify the affected requirements, possible interaction effects, evidence and proposed coverage decision.

26.2 Changes shall be classified by their actual safety effect, not by commercial labels such as facelift, running improvement or equivalent part. The decision categories below govern the extent of review.

Decision	Typical basis	Required action
Administrative record update	Name, document or identifier changes with no technical effect	Verify the absence of a technical change; record the correction. No repeat test.
Demonstrated equivalent configuration	Changed source or part with evidence of equal relevant properties	Independent evidence review and any necessary confirmation. Extend scope only after approval.
Safety relevant delta	Material, restraint, energy, sensor, algorithm or geometry change affecting a subset of requirements	Focused tests and interaction review; issue a linked result revision or separate variant record.
New assessment object	New generation, materially different safety architecture or insufficient reusable evidence	New initial assessment under the applicable released edition.

26.3 A new colour may be administrative, but a paint or coating change affecting radar transmission or a joint may be safety relevant. A new battery capacity may change mass, crash loading and thermal response. A software-only change may alter braking or restraint behaviour. The assessor shall follow the mechanism, not the apparent size of the change.

26.4 An unchanged result may be carried forward only where the original measurement remains representative. The reviewer shall list accepted evidence and retested items. A small change to one part shall not excuse ignoring its effect on coupled systems.

26.5 A delta result shall identify both the original and changed production boundaries. Vehicles built before the change shall not inherit an improved class without evidence that the improvement applies to them. Vehicles already sold may qualify for a distinct updated configuration only after the relevant hardware and software changes are verified.

26.6 An urgent safety correction shall not be delayed solely to complete label administration. The manufacturer shall implement appropriate safety action, inform IAF and prevent misleading label claims while the technical effect is assessed. Regulatory reporting duties remain unaffected.

26.7 Where a delta uses the original test basis, the record shall retain that edition and state the limited change scope. A claim under a newer complete protocol requires a full gap analysis and all missing evidence. Protocol editions shall not be selectively combined to maximize the grade.

27 Certificate and assessment report

27.1 The official certificate shall be titled Vehicle Test and Rating Certificate. It shall identify the rating record, revision, make, model, generation, configuration family, market, production boundary, protocol edition, issue date, class, qualifying conditions and approving authority.

27.2 The certificate shall include or directly reference a configuration coverage schedule. The schedule shall identify safety-package requirements, drive side, powertrain, energy storage, seating, relevant software and exclusions. Broad wording such as all models or all future production is prohibited unless the full identified population is actually covered.

27.3 The certificate shall not contain an expiry date, renewal date or future routine audit requirement. It shall state that the result applies to the recorded configuration and test basis and that material changes or invalidating evidence may alter label authorization.

27.4 The technical report shall contain the complete test register, raw-data references, validity decisions, modifiers, domain calculations, gate outcomes, deviations, evidence equivalences and class calculation. A concise public report may omit proprietary details but shall not omit information necessary to understand the class.

27.5 A certificate shall be issued only after decision and scope release. Blank examples in Annex C are working forms, not issued certificates. No specimen shall contain a real-looking awarded rating, signature or seal suggesting that a vehicle has been tested.

27.6 The certificate, public scorecard and label register shall share one authoritative record identity. Corrections shall create a visible revision and reason. The earlier document shall be marked as superseded or corrected, not silently replaced without a trace.

28 Label design and permitted use

28.1 The label shall display IAF AUTOSAFE, the single applicable class letter, protocol edition or compact edition code, rating identifier and a verification reference. Colour shall not be the sole means of communicating class. Letter, contrast and legibility shall remain adequate in monochrome and for users with colour-vision differences.

28.2 The artwork shall use the A to F letter scale as its sole overall performance hierarchy. A class indicator shall not imply that the distance between adjacent letters represents a fixed change in injury probability. Technology coverage may be described in a separate factual scope line without an additional prestige tier.

28.3 The configuration or package qualifier shall be visible next to the class whenever it changes interpretation. A base vehicle and a safety-package vehicle shall not share an advertisement that presents the higher class as universal.

28.4 Physical labels may be applied only to covered production units. Model webpages, price lists, sales documents and advertisements shall identify the rated scope. Brand-wide use in a way that implies all products are rated is prohibited.

28.5 A QR or other verification reference shall lead to the authoritative record, not merely to a sales homepage. If a digital service is interrupted, a readable record identifier shall still permit verification through an alternative route. A third-party advertisement shall not replace the record.

28.6 The register shall show the original class, edition, applicable variants, issue date and any correction or restriction. Historical results shall not be displayed as evidence of compliance with a later untested edition.

28.7 Claims of guaranteed survival, zero injury, invulnerability or universal fire, bullet or rocket protection are prohibited. Acceptable language shall identify the completed assessment, its class and its tested scope without turning risk reduction into certainty.

28.8 Cosmetic redesign of label artwork shall not require vehicle retesting where the rating meaning and record identity are unchanged. Technical changes to the vehicle shall follow Clause 26 regardless of whether the artwork remains unchanged.

29 Event triggered review and result correction

29.1 A review may be initiated by a credible safety incident, recall, suspected production mismatch, software change, valid complaint, laboratory error, manipulation evidence or an incorrect public claim. The initiating evidence and the question to be resolved shall be recorded.

29.2 The scheme owner shall triage the issue by credible severity and affected scope. Where continued label use could materially mislead consumers about a serious hazard, a precautionary restriction may be applied with a recorded reason. Such a restriction does not by itself establish a new measured class.

29.3 The applicant shall provide relevant records without delay and identify the affected production population. IAF may commission focused analysis, inspection or tests necessary to resolve the issue. This authority shall be limited to the issue and shall not become an undisclosed recurring certification programme.

29.4 Real-world deaths or injuries warrant careful investigation but do not alone prove that a test result was false. Analysis shall consider crash severity, restraint use, vehicle condition, modifications, configuration, exposure and possible confounding factors. Conversely, laboratory success shall not justify dismissing a credible recurring failure mechanism.

29.5 Outcomes may include no change, scope clarification, corrective notice, updated test result, restriction to unaffected configurations, suspension of label use or withdrawal of a result founded on invalid evidence. Every outcome shall state its reasoning and affected scope.

29.6 A valid historical measurement shall be preserved even when label authorization changes. A false or invalid measurement shall not remain presented as valid history. The record shall identify the distinction and the replacement decision where available.

29.7 Restoration of label authorization shall depend on resolution of the identified issue and the relevant evidence. It shall not occur automatically after a waiting period or solely upon payment of a fee.

30 Complaints appeals and confidentiality

30.1 Any person may raise a factual concern about a rating or label through a published route. The complaint record shall identify the issue, evidence, responsible handler and disposition. Relevant reports shall not be rejected merely because the reporter is not an IAF member.

30.2 The applicant shall be allowed to correct factual identification errors before publication without altering valid findings. Disagreement with a low score shall be addressed through the technical review route, not through negotiation of the class.

30.3 Appeals shall be decided by people not responsible for the original disputed decision and free from material conflicts. The decision shall address the stated grounds and evidence. An appeal shall not automatically suspend necessary protective communication to consumers.

30.4 Personal data, protected design information and security-sensitive details shall be handled under appropriate access controls. The public explanation shall remain sufficient to disclose material risks, scope restrictions and the basis of a correction.

30.5 IAF shall keep an interpretation and appeal precedent register so that comparable cases receive consistent treatment. Any change of interpretation shall state whether it clarifies an earlier rule or changes the future assessment basis.

31 Independent class definition and protected vehicles

Independent class definition

31.1 Each AUTOSAFE class shall be established from this edition's own total threshold, domain floors, measured performance limits and mandatory gates. Class C shall represent successful completion of the specified advanced core and robustness programme. Classes B and A shall require their additional released test envelopes and acceptance conditions.

31.2 Validation shall establish the technical basis for each class boundary using biomechanical evidence, relevant hazard scenarios, vehicle-level measurements and laboratory correlation. The study shall examine different vehicle sizes, energy architectures, occupant groups and levels of performance. A class boundary shall not be adopted merely because it produces a desired distribution of labels.

31.3 A favourable supplier report, management-system certificate, simulated demonstration or component result shall not confer a whole-vehicle class. The decision shall use the complete applicable AUTOSAFE evidence package. Reuse of underlying measurements shall follow Clause 11 and shall never create automatic class equivalence.

31.4 Public class descriptions shall state the tested conditions and verified capability. Terms such as autonomous, intelligent, connected or next generation shall not themselves justify points, a higher class or a broader claim. Coverage of a fitted technology shall be reported separately from the overall letter.

Protected vehicle designation

31.5 Ballistic, blast or other hostile-threat protection shall be a separate supplemental designation. A road-safety Class A alone shall not imply armouring. The combined presentation shall state the road class and an identified protection protocol and level, with an explicit qualifier.

31.6 The protective assessment shall be performed by a competent specialist facility against a recognized, precisely bounded method. Its record shall identify the tested threat category, protected zones, vehicle configuration, acceptance criteria and exclusions. This document does not prescribe weapon construction, explosive setup or improvised attack tests.

31.7 Added armour, glazing and protective equipment shall be assessed in the completed vehicle configuration for road-safety effects on mass, braking, rollover, compatibility, restraints and escape. A certificate for an armour material alone shall not establish whole-vehicle protection.

31.8 A claim involving a rocket or another explosive threat requires a dedicated validated protective protocol and its own evidence. Where no released protocol and acceptable test evidence exist, the claim shall remain outside scope and the corresponding label shall not be issued.

32 Technical adoption and operational release

32.1 IAF shall approve the complete technical package before issuing ratings. An operational programme requires released test methods, numeric acceptance limits, point curves, repeat rules, category branches, uncertainty rules and class caps. This system document alone is insufficient.

32.2 The scientific basis shall examine injury metrics, occupant representativeness, scenario relevance, severity escalation, vehicle aggressivity and the ability of the proposed score to distinguish meaningful safety differences. Released limits shall be supported by recorded scientific or engineering justification and the validation results relevant to their intended use.

32.3 Pilot testing shall include multiple vehicle architectures and performance levels. Correlation work shall assess whether independent laboratories obtain sufficiently consistent measurements and class decisions. Class boundaries shall be tested for instability and unintended incentives.

32.4 Stakeholder review shall include manufacturers, independent laboratories, biomechanics specialists, consumer representatives, rescue professionals and relevant technical experts. Comments shall receive reasoned dispositions. Consensus shall not be obtained by waiving a known essential safety requirement for commercial convenience.

32.5 Open technical parameters shall be managed through Annex F. No evaluator shall fill them privately during a live commercial assessment. A class whose essential methods remain unreleased shall be marked unavailable for issue rather than awarded provisionally on opinion.

32.6 Adoption shall identify the responsible decision authority, released documents and evidence of validation. Future amendments shall be driven by technical findings and controlled release decisions, without imposing an automatic renewal cycle on accurately recorded earlier configurations.

33 Technology applicability and extensibility

33.1 The assessment shall combine the common vehicle-safety core with the released methods needed for fitted technology. A technology inventory shall identify safety-related capabilities, operating modes, external dependencies and failure mechanisms. The inventory shall cover functions enabled at customer delivery and any feature whose activation is included in the rated configuration.

33.2 The following terms shall govern technology-specific assessment. Commercial names shall not replace the functional description.

Term	Assessment meaning
Operational design domain	Conditions in which an automated function is intended to operate, including location, road, speed, environment and traffic constraints.
Minimum risk response	Defined action following a fault, limit or unsuccessful transition, evaluated for the resulting risk rather than assumed safe because motion stops.

Term	Assessment meaning
Remote assistance	Off-vehicle information or guidance supporting operation without necessarily controlling the vehicle directly.
Remote driving	Off-vehicle human input that directly controls vehicle motion.
Safety relevant AI	An AI element whose output or failure can affect a safety-related vehicle function directly or through another system.
Digital twin	An identified computational representation of a particular vehicle configuration or system, with a declared purpose and validated limits.
Approved adaptation envelope	Tested boundary within which a learning or adaptive function may change without invalidating the recorded safety argument.

33.3 Applicability shall be determined by safety effect and actual fitment, not by a supplier's description of a feature as entertainment, convenience, experimental or beta. A generative assistant capable of changing a safety setting shall be examined for that control path. A disabled feature shall require evidence that customers cannot activate it within the covered configuration.

33.4 Every technology-specific method shall identify its existing domain and criterion ownership, mandatory gates and interaction tests. The total shall remain 1000 points. Additional requirements may constrain a class without awarding additional points. Missing methods shall not be replaced by assessor-created bonus scores or private exclusions.

33.5 A previously unlisted technology shall enter assessment through a recorded hazard review, proposed method, validation and controlled release. The review shall consider direct effects, coupled failures, foreseeable misuse and effects on other road users. A published technology-neutral method may be used where its applicability and uncertainty are demonstrated.

33.6 If an active safety-relevant function has no adequate released method, the configuration shall remain unavailable for a complete class. A separately verified configuration with that function disabled may be assessed where disabling it does not introduce an unassessed hazard or remove a common requirement. A disclaimer alone shall not exclude an active risk from the rating.

33.7 A technology not fitted shall not incur an arbitrary penalty for lacking that particular implementation. The approved category branch shall assess the corresponding safety outcome where relevant and preserve the domain maximum. A claimed optional capability shall receive no credit until its performance and fitment are verified.

33.8 New methods shall apply through controlled edition or protocol release. They shall not automatically expire earlier truthful results. Activation of a new function, extension of an operating domain or movement outside an approved adaptation envelope shall follow Clause 26 before the earlier label is used for the changed configuration.

34 Automated driving and remote operation

34.1 Each automated function shall have a controlled operational-domain description. The description shall specify supported road types, speeds, environmental limits, traffic conditions, geographic or map

dependencies, necessary infrastructure and required occupant roles. Broad claims such as all roads or all weather require evidence covering those claims and shall not be accepted as a test specification.

34.2 The scenario programme shall test entry to, operation within and exit from that domain. Boundary conditions shall include deteriorating visibility, road works, ambiguous markings, unexpected stationary objects and other hazards identified by the profile. The record shall explain scenario selection and any omitted mechanism.

34.3 The test plan shall distinguish assistance requiring continuous driver supervision from operation in which the system performs the driving task within its domain. Activation conditions, supervision requirements, takeover requests and actual control authority shall be consistent with the interface and the tested capability. Evaluation shall not rely on the driver performing a task that the vehicle explicitly permits the driver to stop performing.

34.4 Transition assessment shall measure warning delivery, task comprehension, available response interval and the vehicle's response when takeover does not occur. The method shall use representative users and predeclared acceptance rules. A displayed countdown or a recorded button press shall not alone demonstrate successful transfer of control.

34.5 Fallback tests shall evaluate stability, trajectory, stopping location, exposure of other road users and ability to summon or accept appropriate assistance. Faults affecting localization, perception, computation, actuation and power shall be included where credible. The protocol shall define unacceptable dangerous actuation and its common-gate effect.

34.6 Remote assistance and remote driving shall be identified separately. Testing shall establish command authority, authorization, feedback, communication assumptions and the vehicle's response to delay, loss, duplication or stale guidance. No road-driving claim shall be supported by a remote-assistance test that never exercised direct control.

34.7 An automated vehicle shall not depend on an unassessed remote intervention to pass a safety scenario. Where remote support is necessary, the end-to-end service and failure behaviour shall be part of the evidence. Testing shall address unavailable operators and conflicting local and remote commands without exposing uninvolved road users to the test hazard.

34.8 Interaction tests shall include pedestrians, cyclists, powered two-wheelers, emergency vehicles and other participants selected by the scenario model. Indicators or external displays shall not be credited merely because they exist. The method shall examine whether signals are understood and whether an incorrect or unavailable signal creates additional risk.

34.9 The operating-domain record shall identify software, model, sensor, map and remote-service dependencies. A new map service, a widened geographic area or a higher supported speed shall receive a delta decision when it changes the evidence basis. The historical rating shall not automatically cover the extended domain.

34.10 The public record shall state the tested automation functions, permitted operating domain, required supervision and material limitations. It shall distinguish an AUTOSAFE assessment from legal authorization to operate. A high vehicle class shall not be advertised as unlimited automated-driving capability.

35 Artificial intelligence and learning systems

35.1 The applicant shall identify each safety-relevant AI element, its intended task, input and output boundaries, model version, execution environment and safety dependencies. Model identity shall include a reproducible fingerprint or equivalent controlled reference. A product name alone shall not establish that the tested model matches production.

35.2 The evidence package shall describe the origin, quality, labelling and intended coverage of development and evaluation data. Evaluation shall use independent data and scenarios protected from intentional or accidental tuning to the assessment. Duplicated or closely related samples shall be addressed when claiming independence.

35.3 Performance shall be reported for relevant conditions and affected user groups, including vulnerable road users where the function interacts with them. An overall average shall not conceal a systematically weak condition. The protocol shall define the minimum coverage, uncertainty treatment and failure limits before testing.

35.4 Robustness testing shall examine relevant input degradation, occlusion, sensor disagreement and conditions outside the model's supported distribution. The evidence shall distinguish detecting uncertainty from safely responding to it. Confidence scores shall not be treated as calibrated safety probabilities without supporting validation.

35.5 The vehicle shall implement and demonstrate the response required when an AI output is unavailable, inconsistent, late or outside its accepted limits. The assessment shall exercise that response in the coupled vehicle system. A nominal fallback block in a diagram shall not establish effective hazard control.

35.6 Generative or conversational systems shall have explicit authority limits. Where outputs can reach safety-related controls, testing shall examine ambiguous requests, contradictory information, untrusted retrieved content and unauthorized instructions. Arbitrary generated text shall not bypass the validated control and authorization path.

35.7 A safety-related response produced by a generative interface shall be assessed for the actual user task, including comprehension, distraction and recoverability from a wrong answer. Safety-critical status and emergency actions shall remain available through the validated interface when the generative function or its network connection is unavailable.

35.8 Online learning or adaptation shall be permitted within a rated configuration only where a released method defines and validates the adaptation envelope. The record shall identify mutable parameters, invariant constraints, detection of boundary departure and the demonstrated safe response. Unbounded safety-relevant self-modification shall not be covered by the initial class.

35.9 A changed model, training dataset, inference engine, quantization or execution platform shall receive a safety-impact review when it can alter outputs, timing or failure behaviour. The review shall retain the model and dataset lineage needed to reproduce the decision. A model update shall not be classed as cosmetic solely because the external feature name is unchanged.

35.10 AI-specific tests shall support the existing criterion and gate decisions without creating a separate prestige score. The report shall preserve material limitations and unsuccessful tests. Acceptance shall rely on evidence for the installed system, not on a supplier's generic accuracy claim or the size of its model.

36 Connected services and resilient software architecture

36.1 The assessed architecture shall identify safety-relevant onboard, cloud, roadside and remote-service dependencies. For each dependency, the test plan shall define loss, delay, corruption, disagreement and restoration states where these can affect safety. Normal connectivity shall not be assumed during fault or rescue assessment.

36.2 Vehicle-to-vehicle and vehicle-to-infrastructure information shall be assessed for authenticity, freshness, relevance and conflict with local observations. The vehicle's safe response shall be tested when information is absent or inconsistent. A connected message shall not automatically authorize a manoeuvre that violates the validated local safety constraints.

36.3 Safety-related functions shall be tested under the released processor, memory, network, power and thermal stress conditions. The programme shall examine credible shared-resource and common-cause failures. Redundant software running on a shared resource shall not be assumed independent without evidence.

36.4 Steering, braking or propulsion controlled by electronic interfaces shall have demonstrated fault-detection and response behaviour for the claimed architecture. Tests shall assess the resulting vehicle motion and controllability. The number of backup channels shall not substitute for measured response to the specified fault set.

36.5 Software update evidence shall cover partial installation, interrupted power, incompatible dependencies and recovery to a verified state. Safety functions shall not silently disappear during an update condition in which the vehicle can be operated. The change record shall identify the configuration actually installed rather than only the update offered to the user.

36.6 Security evaluation shall include relevant access control, integrity and recovery properties using authorized, contained methods. The applicant shall demonstrate how safety-related credentials and cryptographic mechanisms can be replaced without unsafe loss of function. No claim of permanent immunity from future attacks shall be derived from the test result.

36.7 Service unavailability, account loss, commercial deactivation or withdrawal of an external dependency shall have a defined safe behaviour and an accurate public scope statement. Necessary safety behaviour in the rated base configuration shall not depend on an undisclosed paid subscription. A later change affecting that behaviour shall trigger Clause 26 or 29, not calendar renewal.

36.8 The vehicle shall retain the minimum technical event information needed to investigate the assessed safety functions, subject to applicable privacy requirements. The evidence shall establish time consistency, integrity and accessibility to authorized investigators. The rating shall not require publication of personal journeys or owner identity.

37 Emerging energy systems structures and materials

37.1 Energy assessment shall be based on the installed chemistry, storage architecture and failure mechanisms. Descriptions such as solid state, sodium ion or next generation shall not create an exemption from containment, electrical, fire or rescue requirements. A different chemistry requires an applicability decision even if the enclosure dimensions are unchanged.

37.2 Structural batteries and other load-bearing energy systems shall be evaluated for coupled crash and energy effects. The plan shall address damage that changes both structural capacity and containment. Separate component results shall not establish whole-vehicle performance without verified load paths, installation and post-impact behaviour.

37.3 Fast charging, wireless charging and bidirectional power modes shall be included where fitted and safety-relevant. The released method shall address the actual interface, alignment or connection state, protective shutdown, heat, electrical isolation and foreseeable misuse. Unsupported interfaces shall not be implied by a general charging claim.

37.4 Battery swapping or other exchangeable energy modules shall have evidence for mechanical retention, electrical connection, configuration recognition and incompatible-module prevention. The assessment shall identify the approved module family and examine a foreseeable incomplete or incorrect connection under controlled conditions.

37.5 Hydrogen and other alternative energy carriers shall use validated hazard-specific methods for the installed system. Combined systems shall be examined for interaction between electrical, pressure, thermal and chemical hazards. A successful test for one energy carrier shall not establish the safety of an untested alternative.

37.6 New casting, joining, composite or additive-manufacturing approaches shall have evidence that the tested load paths and material properties represent production. Relevant defects, damage sensitivity and environmental conditioning shall be selected from the failure mechanism. A process name or material-strength value alone shall not prove crash protection.

37.7 Repair, replacement or refurbishment sensitivity shall be reported where it affects the assessed safety mechanism. A specific conditioned-sample test may establish performance under that condition; it shall not imply inspection of every used vehicle. This requirement does not create a certificate age limit or a periodic retesting programme.

37.8 Rescue information shall identify the energy system and structure actually installed, including hazards introduced by integrated storage or unusual load-bearing elements. Tests of emergency access and isolation shall use that configuration. Information for a conventional derivative shall not automatically cover an emerging architecture.

38 Virtual evidence digital twins and scenario validation

38.1 Every computational tool used for a rating decision shall have a declared context of use. The record shall identify model configuration, solver or execution version, input data, calibration basis, output processing and known limitations. A digital twin shall match the rated baseline to the level necessary for the claimed result.

38.2 Physical measurements shall establish the relevant correlation before virtual evidence extends coverage. The validation set shall be sufficiently independent of model calibration to test predictive capability. Acceptance bands and the treatment of disagreement shall be released before the decisive comparison.

38.3 Generated scenarios shall follow an explicit coverage model describing hazards, parameter ranges and selection rules. Synthetic realism shall not substitute for physical relevance. The report shall state whether a scenario was derived from an observed mechanism, a controlled parameter variation or an exploratory hypothesis.

38.4 The assessment shall preserve adverse scenarios and failed correlations. Selection of only favourable simulations is prohibited. Randomized tests shall retain seeds or equivalent replay controls, and nondeterministic outputs shall use a released sampling and acceptance rule.

38.5 Human-body, occupant or traffic-participant models shall be qualified for the represented population and loading conditions. A model outside its validated range shall not silently extend a protection claim. The evidence shall describe uncertainty and where physical testing remains necessary.

38.6 A discrepancy between a validated simulation and a physical result shall receive a recorded technical disposition. The more favourable result shall not automatically prevail. The disposition shall address model validity, test validity and whether the affected class decision remains supportable.

38.7 Claimed exposure, scenario counts or virtual distance shall not be converted into a real-world casualty probability without an appropriate statistical model and evidence for its assumptions. Correlated or duplicated scenarios shall not be presented as independent observations.

38.8 The acceptance record shall link each permitted virtual result to the exact criterion or gate it supports. It shall state the remaining physical-test requirements. Evidence reproducibility shall be assessed under D12; the simulated safety outcome shall remain assigned to its own performance domain without duplicate credit.

39 Evolving cabins accessibility and novel interfaces

39.1 The applicant shall identify every seating, restraint and cabin arrangement permitted while the vehicle is moving in a rated mode. Rotating, reclining or reconfigurable seats shall not inherit a forward-facing result without a validated coverage decision. Unassessed moving configurations shall be reliably prevented within the rated baseline.

39.2 Occupant-protection evidence shall address the permitted configurations, relevant stature and child-restraint combinations. Features intended to return a seat to a protective position before an impact shall be tested for detection, timing, completion and failure response. Intended motion in a design drawing is not proof of achieved protection.

39.3 Interfaces shall be assessed for users represented by the applicable profile, including accessibility needs relevant to the claimed function. Voice, gesture, augmented displays and biometric controls shall have an evaluated failure response. An emergency action shall not become unavailable solely because a recognition service fails or the user cannot use one input modality.

39.4 Essential driving information shall be evaluated for legibility, distraction and consistency across normal and degraded states. A novel display shall not conceal uncertainty or obscure critical warnings. Changes to display logic or control mapping shall receive a delta decision where they can change rated behaviour.

39.5 Occupant detection shall distinguish the safety tasks claimed, including restraint classification, child presence and emergency response. Tests shall examine relevant occlusion and non-standard permitted postures. A detection result shall not be represented as a medical diagnosis or universal occupant-health monitoring.

39.6 Emergency release, escape and responder access shall remain assessed for the permitted cabin layouts after the defined loss of power and deformation. A cabin marketed for unsupervised travel shall not rely on an unavailable driver to perform the essential escape action unless the rated scope explicitly requires and validates that role.

39.7 The public scope record shall identify any layout, accessibility function or operating mode excluded from coverage. Exclusion is permitted only where it does not hide an active common safety hazard. Later cabin or interface changes shall follow the configuration-based decision rules, without introducing time-based renewal.

Annex A Proposed criterion point schedule

This schedule allocates exactly 1000 points. All allocations are proposed policy values pending Annex F validation. A criterion's allocation does not establish its missing test limits or scoring curve. Each criterion below shall have a corresponding released method and rubric before points can be awarded.

ID	Criterion and scoring ownership	Points
D01.1	Driver monitoring performance	30
D01.2	Essential controls and visual demand	15
D01.3	Warnings and driving information	15
D01.4	Unresponsive driver response	10
D02.1	Vehicle and powered two wheeler avoidance	35
D02.2	Pedestrian and cyclist avoidance	35
D02.3	Lane departure collision mitigation	25
D02.4	Low speed manoeuvring protection	15
D02.5	Defined robustness and false intervention checks	10
D03.1	Frontal offset primary occupant protection	40
D03.2	Full width primary occupant protection	25
D03.3	Limited overlap and oblique loading	20
D03.4	Vehicle partner compatibility	30
D03.5	Released frontal robustness envelope	25
D04.1	Near side barrier protection	30
D04.2	Narrow object side protection	20
D04.3	Far side protection	20
D04.4	Rear impact protection	15
D04.5	Rollover and occupant retention	20
D04.6	Defined multiple event resilience	5
D05.1	Additional small and large occupant coverage	25
D05.2	Additional rear seating diversity	15

ID	Criterion and scoring ownership	Points
D05.3	Child restraint and child occupant protection	30
D05.4	Child presence detection and response	10
D05.5	Out of position and classification protection	10
D06.1	Vulnerable road user head impact protection	40
D06.2	Pelvis and lower extremity impact protection	30
D06.3	Local zone and active exterior performance	10
D07.1	Post impact energy containment	30
D07.2	Energy specific fire or propagation protection	25
D07.3	Charging or refuelling branch performance	20
D07.4	Hazard warning and electrical or fuel isolation	15
D07.5	Water exposure and recovery hazard branch	10
D08.1	Vehicle safety argument and hazard coverage	20
D08.2	Fault response and degraded operation	25
D08.3	Intended function limitations and misuse	15
D08.4	Validation of permitted computational evidence	10
D09.1	Safety relevant access and interface protection	15
D09.2	Update integrity and safe recovery	20
D09.3	Regression and external dependency controls	15
D10.1	Door release and occupant access	30
D10.2	Rescue information accuracy and access	15
D10.3	Emergency communications performance	20
D10.4	Post crash functions and emergency power	15
D10.5	Defined special escape conditions	10
D11.1	Released baseline completeness	15
D11.2	Tested sample to production matching	15
D11.3	Variant and family evidence	15

ID	Criterion and scoring ownership	Points
D11.4	Label release identification	5
D12.1	Enhanced traceability checks beyond admissibility	10
D12.2	Independent reproduction of scoring	10
D12.3	Released additional correlation checks	10

A.1 The complete domain sum shall remain fixed. Technology-specific branches shall have the same declared domain maximum and validated comparable safety objectives. If no appropriate branch exists, the profile is not operational for that architecture.

A.2 Gates for A and B may demand tests beyond the point-bearing robustness criterion. Passing a threshold on points shall never substitute for those tests. The protocol shall identify whether a test affects a score, a gate or both.

A.3 The computational-evidence criterion shall include a released alternative route for a fully physical evidence programme. A manufacturer shall not lose points simply because it chooses valid physical testing instead of simulation. Neither route may skip required coverage.

A.4 Local-zone protection shall score the additional property explicitly assigned to D06.3, not duplicate the same head or leg metric already counted in D06.1 or D06.2. Similar ownership rules apply to occupant-diversity and energy-isolation evidence.

A.5 Evidence-quality criteria shall have observable rubrics with equal access for large and small manufacturers. Essential evidence remains compulsory even where an applicant elects not to pursue additional points.

Annex B Controlled test protocol pack

B1 Required protocol inventory

All protocol titles below carry the document identity IAF AUTOSAFE First Edition, followed by the descriptive title. Their individual revision and release date shall be controlled without assigning an additional standard number.

Protocol title	Required controlled subject
Vehicle Category Profiles	Applicability, loading, seating and fixed scoring branches
Production Identity and Sampling	Baseline identification, representative selection and custody
Measurement and Test Validity	Instrumentation, processing, uncertainty and repeat rules
Virtual Evidence Validation	Simulation, digital twins, physical correlation and acceptance bands
Safe Driving and Human Factors	Driver supervision, essential controls and user tasks
Crash Avoidance	Controlled scenarios, adverse conditions and dangerous intervention
Frontal Protection and Compatibility	Frontal loading, occupants and impact-partner effects
Side Rear and Rollover Protection	Lateral, rear, rollover and defined multiple-event tests
Occupant Diversity and Cabin Safety	Child protection, diverse occupants and permitted cabin layouts
Vulnerable Road User Protection	Exterior impact zones and active exterior protection
Energy and Fire Safety	Energy-specific electrical, thermal, pressure and containment tests
Functional Safety	Faults, intended-function limitations and degraded operation
AI Safety	Model and data evidence, robustness, uncertainty and change boundaries
Automated Driving	Operational domain, transitions, fallback and remote assistance
Connected Vehicle Resilience	External dependencies, communication loss and safe local behaviour
Cybersecurity and Software Integrity	Authorized security evaluation, update and recovery tests
Post Crash Rescue and Escape	Access, release, emergency power and rescue information
Emerging Structures and Materials	New load paths, structural energy storage and damage sensitivity
Initial Production Equivalence	Sample matching and family or supplier equivalence
Scoring and Class Decisions	Point functions, floors, gate caps and calculation reference
Certificates and Labels	Record identity, coverage, artwork and permitted claims
Protected Vehicle Supplement	Separate specialist assessment of explicitly bounded threats

B2 Mandatory contents of each test method

B.2.1 Each protocol shall state its purpose, safety mechanism, applicability, exclusions, revision, validation status and whether it supports a point criterion, a gate or both. The controlled test identifier shall follow each resulting evidence item.

B.2.2 Sample preparation shall specify condition, loading, tyres, energy state, temperature, occupant setup, software and system mode. It shall identify permitted tolerances and the action required if an actual value falls outside them.

B.2.3 Apparatus specifications shall identify barrier or target characteristics, instrumentation, dummy or model qualification, calibration, fixture, road surface and relevant environmental conditions. Equipment substitution requires a released equivalence rule.

B.2.4 Execution shall define the sequence, measurements, synchronization, permitted repeats, abort conditions and personnel safety controls. It shall distinguish invalid execution from a valid adverse vehicle response.

B.2.5 Processing shall define inputs, units, signs, filters, derived metrics, time windows, aggregation and numerical precision. Missing or saturated channels shall have a predetermined disposition.

B.2.6 Acceptance shall identify common limits, class-specific limits, points curves, modifiers and interactions. The method shall state which values are biomechanically validated, which are engineering acceptance limits and which are policy-based scoring choices.

B.2.7 The report shall contain results, uncertainty, deviations, validity, score and gate outcomes with direct links to retained raw evidence. A competent independent reviewer shall be able to reproduce the decision from the package.

B3 Parameter release worksheet

The following worksheet is a required completion record, not permission to choose private numerical limits.

Parameter family	Items to release	Required justification
Crash geometry and severity	Speed overlap angle partner mass barrier and load state	Scenario relevance apparatus validation and injury measurement validity
Injury interpretation	Metric units sensor filtering risk curve and body region limits	Biomechanical source model population and uncertainty
Structural acceptance	Intrusion location direction survival space and integrity criteria	Injury mechanism and repeatable measurement
Avoidance performance	Target trajectories speeds friction environment and outcome scale	Scenario coverage target validity and repeatability
Fire and energy	Fault or damage state observation conditions warning and isolation limits	Relevant hazard mechanism and measurement method
Escape and rescue	Damage state power state user task and success criteria	User capability responder input and repeatable task definition
Computation	Model qualification correlation and acceptance bands	Physical anchors sensitivity and independent review

Annex C Operational forms and record requirements

These forms are part of the working file. Each completed record shall use its own identifier and revision. The fields below are requirements for information capture, not blank issued certificates or evidence that any vehicle has passed.

C1 Application and programme scope

Responsible organization

Applicant legal name: [complete]. Manufacturer and production responsibility: [complete]. Authorized technical contact: [complete]. Applicant's right to use the submitted evidence: [complete].

Vehicle and market

Make and model: [complete]. Generation and baseline ID: [complete]. Category profile: [complete]. Markets and drive side: [complete]. Intended production-release boundary: [complete]. Requested family and package coverage: [complete].

Programme commitments

The applicant shall attach the variant schedule, fitment schedule, known relevant limitations, legal-compliance register and proposed evidence sources. It shall acknowledge independent sample control, factual review without result negotiation, result-publication rules and the absence of calendar renewal.

Release authority and date: [complete]. IAF completeness reviewer and programme ID: [complete]. Open items and resolution owner: [complete].

C2 Production baseline record

Field group	Required entries
Identification	Baseline revision generation body drive side market and seating
Structure	Relevant material revisions joints load paths and geometry
Occupant systems	Seat restraint airbag anchorage and controller identities
Dynamics	Brakes steering suspension tyre and wheel range
Energy	Powertrain battery or storage specification mass and hazard branch
Software	Safety relevant version calibration configuration and dependencies
Manufacturing	Site critical sources released specification and matching evidence
Unit coverage	VIN or build rule first covered unit and exclusions

The baseline shall be signed by the manufacturer's release authority and accepted by the technical reviewer before it is used as the basis for label authorization.

C3 Applicability and evidence decision sheet

For each requirement, record the following entries in sequence: requirement ID; category and configuration; required safety outcome; applicability status; protocol branch; proposed evidence ID; reason for any equivalent method; required data gaps; reviewer; disposition.

Approved statuses are Required, Equivalent Method Approved and Not Applicable Under Profile Rule. Not Tested and Evidence Missing are evidence states and shall not be used as applicability exclusions. An unresolved required item blocks the relevant decision.

The reviewer shall state whether an approved exclusion changes test execution only or uses an explicit alternative scoring branch. It shall never authorize an undocumented reduction in the denominator.

C4 Sample and test record

Test ID: [complete]. Sample ID and custody reference: [complete]. Baseline match: [complete]. Laboratory and relevant competence: [complete]. Protocol revision: [complete].

Preparation and actual conditions: [complete]. Software snapshot and permitted remote functions: [complete]. Instrumentation and calibration: [complete]. Raw data and video references: [complete].

Execution validity: [valid / invalid / unresolved, with reason]. Performance measurements and uncertainty: [complete]. Deviations: [complete]. Scoring criterion and gate effect: [complete]. Responsible test engineer and independent reviewer: [complete].

A result shall not be marked invalid solely because it is unfavourable. If a repeat is authorized, attach the repeat-rule reference and preserve the original record.

C5 Rating calculation and decision sheet

Record one line for every Annex A criterion: maximum points, admissible evidence, measured inputs, rubric or function revision, modifiers, awarded points and calculation reference. Record each domain's unrounded percentage and the complete total.

For every class from A downward, record: total threshold met; all domain floors met; common gates passed; class-specific gates passed; required technology methods completed; complete required evidence; allowed decision.

Final result: [class or unrated status]. Restricting condition: [complete]. Public total: [complete or deliberately omitted with reason]. Covered baseline and variants: [complete]. Technical reviewer: [complete]. Independent decision authority: [complete].

The system shall preserve the calculation version and its input record. A public class may not be issued from a manually typed letter without its reproducible decision sheet.

C6 Vehicle Test and Rating Certificate content

SPECIMEN CONTENT ONLY — NOT AN ISSUED CERTIFICATE

IAF AUTOSAFE Vehicle Test and Rating Certificate.

Rating ID and revision: [complete]. Issue date: [complete]. Assessment edition and profile: [complete].
Manufacturer: [complete]. Make, model and generation: [complete]. Baseline and configuration schedule
reference: [complete]. Markets and production boundary: [complete].

Assessed class: [assigned only after release]. Total and domain scorecard reference: [complete]. Class
conditions and exclusions: [complete]. Protected designation, if separately supported: [complete or omit].
Verification record: [complete]. Decision authority: [complete].

Required scope statement

This document records test and assessment results for the production configuration identified in its coverage
schedule. It has no calendar expiry. Its label may be used only for vehicles matching that scope and subject to
any recorded correction or restriction. Material technical changes require a coverage decision. The rating
does not guarantee survival or freedom from injury and does not certify the present condition of an
individual used vehicle.

No expiry, renewal or routine audit field shall be added. A date field shall identify an actual event such as
issue, test execution or configuration release.

C7 Consumer scorecard

The scorecard shall show: class letter; test edition; make, model and generation; market; relevant safety
package; powertrain and seating coverage; twelve domain results; common and higher-class gate findings;
the test scenarios completed; material limits; rating record status; and verification reference.

Plain-language explanation: The class describes performance in the specified assessment. The test edition
matters. A result for another package, generation or software configuration may not apply to this vehicle.
Inspect the coverage record before relying on the class in a purchase comparison.

If a class changes after a correction, the scorecard shall show the previous result, corrected result, reason
and affected configurations. It shall not hide a restriction behind a broken link or a replacement marketing
page.

C8 Change and delta decision

Existing rating and baseline: [complete]. Proposed new baseline: [complete]. Description and reason for
change: [complete]. First affected production boundary: [complete].

Safety mechanisms affected: [complete]. Criteria and gates affected: [complete]. Interaction analysis:
[complete]. Original evidence still applicable: [complete]. New evidence required: [complete].

Decision category: [administrative / equivalent / safety-relevant delta / new assessment object]. Tests and
reviewers: [complete]. Coverage outcome and record revision: [complete]. Permission to label changed units:
[approved / not approved, with scope].

C9 Incident and correction record

Trigger and evidence received: [complete]. Known baseline and affected population: [complete]. Credible
immediate risk and precautionary action: [complete]. Investigation question: [complete].

Additional evidence, inspection or test: [complete]. Findings and uncertainty: [complete]. Effect on historical result: [complete]. Effect on current label authorization: [complete]. Public notice and configuration boundary: [complete].

Applicant response: [complete]. Independent decision: [complete]. Appeal route: [complete]. Conditions for resolving any restriction: [complete].

C10 Existing laboratory evidence acceptance record

Originating laboratory and report ID: [complete]. Test method edition and tested variant: [complete]. Fitment and software: [complete]. Raw evidence access and permission: [complete].

AUTOSAFE criterion mapped: [complete]. Common physical mechanism and method differences: [complete]. Measurement and scoring differences: [complete]. Gaps and new tests: [complete]. Approved use and limitations: [complete].

The record shall accept only the identified underlying evidence for the listed AUTOSAFE requirements. It shall not import an external class or substitute a certificate summary for measurements. Each score and gate decision shall be calculated under this edition's released methods.

C11 Technology inventory and applicability record

Configuration and operating modes: [complete]. Safety-relevant functions and authority: [complete]. Fitted, disabled and separately activatable capabilities: [complete]. Onboard, roadside, remote and cloud dependencies: [complete].

For each technology, record: hazard mechanism; applicable clauses; named released protocol; criterion and gate ownership; physical and virtual evidence; limitations; unresolved items; responsible reviewer. A claim of not applicable shall include the category rule and supporting evidence.

Coverage decision: [assessed / disabled in covered configuration / issue blocked]. Public scope wording: [complete]. Change triggers and original baseline reference: [complete].

C12 AI model and adaptation record

Function and vehicle baseline: [complete]. Model fingerprint and execution environment: [complete]. Data lineage and independent evaluation set: [complete]. Evaluated conditions and user groups: [complete]. Safety constraints and output authority: [complete].

Measured failures, uncertainty and fallback evidence: [complete]. Permitted adaptive parameters and envelope: [complete or adaptation disabled]. Boundary-departure response: [complete]. Model, data or platform changes requiring review: [complete]. Reviewer and disposition: [complete].

C13 Automated and connected operation record

Function, supervision role and operational domain: [complete]. Entry, exit, takeover and fallback tests: [complete]. Remote assistance or direct driving authority: [complete or not fitted]. Communication delay, loss, stale information and restoration evidence: [complete].

Shared resources and fault scenarios: [complete]. Necessary external service and commercial dependencies: [complete]. Verified local failure response: [complete]. Assessed modes, exclusions and label wording: [complete]. Supporting protocol and release decision: [complete].

C14 Virtual evidence acceptance record

Model identity, physical baseline and context of use: [complete]. Calibration set and independent validation set: [complete]. Physical correlation, acceptance bands and uncertainty: [complete]. Scenario origin, coverage and replay controls: [complete].

Adverse results and model limitations: [complete]. Criterion or gate supported: [complete]. Remaining physical tests: [complete]. Independent reproducibility result and approving reviewer: [complete]. An accepted model shall not imply acceptance outside its recorded context of use.

Annex D Worked application decisions

The numerical examples are artificial calculation checks. They are not vehicle test results and do not validate the proposed boundaries.

D1 Strong total with a limiting domain

Assume a complete vehicle assessment obtains 880 points, every domain is at least 75 percent except D09 at 72 percent, and all C gates pass. B is not available because its every-domain floor is not met. C is available because its total, domain floors and class conditions are satisfied. The unused surplus elsewhere cannot repair the D09 floor.

D2 Rounding close to a class threshold

Assume the exact total is 849.999 and all other B conditions pass. The vehicle does not meet the B total minimum of 850. A public display that rounds to 850.00 does not change the decision. The scorecard shall explain the limiting unrounded value to prevent ambiguity.

D3 Class A points without Class A tests

Assume 950 points and every domain above 85 percent, but no valid A extended-envelope evidence. A cannot be issued. B may be issued only if its independent test and gate requirements are complete and satisfied. If essential methods have not been released for that profile, the missing work shall not be waived.

D4 No report versus a failed test

A vehicle with no completed assessment remains unrated. A vehicle with valid evidence of a common survival-space gate failure receives the corresponding adverse F finding. Where that valid failure is established before all other tests are completed, those areas are disclosed as incomplete and no fictitious total is printed.

D5 Base model and optional package

A base configuration assessed as C and a separately tested safety package assessed as B shall have distinct scope entries. The B label is limited to vehicles fitted and configured with the complete package. A brochure may show both results, with the package qualifier adjacent to the relevant class.

D6 Continued manufacture without change

An unchanged generation remains in production. Its controlled components, safety configuration and approved family coverage remain equivalent. No new test is required merely because time passes or the marketing model year changes. Labels continue to display the original assessment edition, not a newer untested edition.

D7 Different battery and braking software

A revised pack changes mass distribution and a new braking calibration changes intervention. The manufacturer submits one linked change record covering structural loads, compatibility, handling, avoidance,

thermal hazards and software regression. Unaffected evidence may be reused; affected tests and interactions require a delta decision before the old label is applied to the new configuration.

D8 Production ends and stock is registered later

Manufacture of the configuration ends. The register identifies the ended production range without deleting its test history. Unsold stock and later registrations remain associated with that configuration's result. A successor carrying the same model name does not inherit the predecessor's rating without a new coverage decision.

D9 A defect found after issue

A credible restraint-component defect affects a bounded production batch. The review identifies that batch, evaluates the mechanism and restricts misleading label use where necessary. The original test may remain a valid result for conforming specimens while the defective batch requires a corrective notice. If the investigation instead proves that the tested specimen was not production representative, the underlying result itself must be corrected or withdrawn.

D10 Armoured conversion

A converter adds armour to a rated base vehicle. The original road label does not automatically cover the added mass, changed glazing, escape behaviour or altered load paths. The finished vehicle requires a road-safety coverage decision and separate specialist evidence for any protective designation. A material armour certificate is not a whole-vehicle A rating.

D11 Software activation of automated operation

A vehicle is rated with a driver-supervised function. A later software release enables operation without continuous driver supervision. The earlier letter does not establish coverage of the new mode. The changed configuration needs the applicable operational-domain, AI, transition and fallback evidence. Its original configuration record remains historical evidence; the new feature is not covered merely because no hardware was changed.

D12 Learning outside an approved boundary

A fitted learning function changes parameters outside its approved adaptation envelope. The initial rating does not cover that state. The verified boundary response and affected configuration determine the immediate safety and label actions. A delta decision requires the relevant new evidence; passage of time alone is not the trigger.

D13 Missing connected capability and unsafe dependency

A vehicle without a connected driving service follows the approved branch for its actual architecture and receives points for measured outcomes. Another vehicle depends on a connected service but behaves unsafely when the service is lost. The second vehicle cannot exclude that loss condition because connectivity is described as optional. Its failure is decided under the relevant released criterion and common-gate rules.

Annex E Stakeholder safeguards

Stakeholder	Safeguard written into the system
Vehicle buyer	Visible edition and package scope; no survival guarantee; verifiable class and correction history.
Manufacturer	No calendar renewal; proportionate delta testing; factual review and independent appeal.
Small or specialist producer	Competence-based evidence routes; no membership advantage; category-specific methods rather than unsupported exemptions.
Laboratory	Controlled methods, explicit validity rules, custody and protection from result manipulation.
Technical reviewer	Reproducible calculations, fixed gates and documented interpretation route.
Rescuer	Correct configuration-specific emergency information and assessed access conditions.
Road user outside the vehicle	Compatibility and vulnerable road-user requirements that cannot be erased by self-protection scores.
Regulator	Clear separation between consumer rating and legal market authorization.
Used vehicle owner	Preserved original result without a false claim that the individual vehicle's present condition was assessed.
Scheme owner	Traceable decisions, controlled claims, technical release gates and bounded correction powers.

The objective is fair and explainable treatment, not a promise that every applicant will like the outcome. Equal rules and complete reasons shall take precedence over commercial pressure to award a higher class.

Annex F Technical release register

This is the operational release gate for the working document. None of the items below is assumed completed. The record shall be updated with actual approved evidence before public ratings are permitted.

Release item	Required closure evidence	Current working status
R01 Category profile	Adopted scope, variant rules and complete energy branches	Open
R02 Injury criteria	Validated metrics, body regions, limits, populations and uncertainty	Open
R03 Impact suite	Released geometry, severity, apparatus and repeatability evidence	Open
R04 A and B extension	Validated extended envelopes and class-specific ceilings	Open
R05 Avoidance methods	Controlled scenario coverage, false intervention and robustness rules	Open
R06 Energy and rescue	Released hazard states, observation rules and escape criteria	Open
R07 Scoring functions	Complete point curves, modifiers, domain floors and gate caps	Open
R08 Criterion ownership	No duplicate points or unsupported exclusions	Open
R09 Laboratory correlation	Acceptable reproducibility for decisive methods	Open
R10 Independent class validation	Scientific justification and vehicle measurements supporting the AUTOSAFE class limits	Open
R11 Evidence competence	Named competent facilities, reviewers and decision authorities	Open
R12 Operational records	Verified scope registry, calculation reference and label controls	Open
R13 Consultation and rights	Disposed comments and necessary protocol-use permissions	Open
R14 Formal adoption	Approved complete document set and recorded release decision	Open
R15 Automation and AI	Released operational domains, scenario coverage, AI evidence rules and fallback methods for fitted functions	Open
R16 Connected architectures	Validated communication loss, remote authority, update and shared-resource failure tests	Open

Release item	Required closure evidence	Current working status
R17 Emerging energy and cabins	Released methods for the installed energy, structure and permitted occupant configurations	Open
R18 Virtual evidence	Qualified tools, physical correlation, independent scenario sets and scoring ownership	Open

F.1 A parameter is closed only when the appropriate technical authority approves a dated, controlled specification with its supporting evidence. A draft number typed into a table is not closure.

F.2 Pilot vehicles shall represent different sizes, structures, propulsion systems and expected performance levels. Pilot reports shall examine boundary effects and whether plausible technical changes produce sensible score changes. The plan shall be chosen for scientific adequacy, not an invented universal minimum count.

F.3 Methods decisive for A, B or C shall receive independent correlation and the relevant biomechanical, control-system or energy-hazard review. An absence of serious events in a small sample of road use shall not replace this work.

F.4 The proposed weights and floors may be revised after validation. Any change shall be documented before operational release. Once a live programme begins, the scoring basis shall not be adjusted privately to achieve a desired result.

F.5 If a protected-vehicle supplement is not ready, it may remain unavailable without blocking release of a properly validated road-vehicle profile. No protective claim shall appear in the road label while that supplement remains unreleased.

Annex G Technical evidence and reference register

G1 Independent technical basis

AUTOSAFE requirements, scoring and class decisions are established by this edition and its released protocol pack. Engineering references may support measurement validity, hazard analysis or laboratory competence. They do not define an AUTOSAFE class and their use does not imply endorsement of this system.

G.1 Each adopted reference shall have a register entry stating its publisher, full title, edition, applicable part, technical purpose, access rights and the AUTOSAFE requirement supported. A broad citation to an entire field shall not replace the specific measurement or acceptance rule.

G.2 The technical authority shall review the complete relevant content before incorporating a requirement. An abstract, catalogue entry or search summary shall not establish clause-level conformity. Required permissions and technical differences shall be resolved before the protocol is released.

G2 AI engineering resources for technical development

ISO/PAS 8800:2024, Road vehicles Safety and artificial intelligence, is a technical resource for examination of AI-related vehicle hazards. Its official catalogue describes safety-related AI systems and interactions affecting vehicle safety. It does not supply the AUTOSAFE point schedule or class thresholds. Source:

<https://www.iso.org/standard/83303.html>

The NIST AI Risk Management Framework and its Generative Artificial Intelligence Profile provide voluntary resources for AI risk evaluation. They may inform technical development of AI evidence and misuse scenarios; they are not vehicle test approval or AUTOSAFE rating criteria. Source: <https://www.nist.gov/itl/ai-risk-management-framework>

G.3 Resources listed for technical development are informative until their exact use is approved in the controlled reference register. The first-edition requirements for AI, automation and digital evidence shall be validated through the AUTOSAFE release process; referencing a resource shall not close an open item in Annex F.

G3 Evidence ownership and reproducibility

G.4 The evidence register shall distinguish independent technical literature, applicant design information, commissioned tests and released IAF methods. For every numerical acceptance limit, it shall retain the supporting scientific model or engineering rationale, uncertainty, applicable population and approving authority.

G.5 Method validation shall preserve favourable and adverse results, failed correlations, limitations and corrective decisions. Publication of a method title alone shall not establish its reliability or completeness. The accessible public record shall identify the adopted assessment basis without exposing protected design data.

Annex H Technology applicability and evidence matrix

This matrix routes fitted technology to existing domains. It creates no additional points. Each required test shall have one identified score owner and any separately defined gate effects.

Technology family	Required evidence focus	Domain ownership
Automated driving	Operational limits, transitions, fallback, human interaction and end-to-end vehicle behaviour	D01 D02 D08
AI and learning systems	Model identity, representative independent data, uncertainty, robustness and bounded change	D08 with D01 D02 for measured driving outcomes
Remote assistance and connected services	Authority, communication loss, stale data and safe local response	D08 D09 with D10 for emergency delivery
Software defined and by wire architecture	Fault response, timing, shared-resource independence and update recovery	D08 D09
New battery chemistry and bidirectional power	Installed energy hazards, warning, containment, isolation and interface failure	D07 with D10 for escape
Hydrogen and other energy carriers	Containment, venting, interaction hazards and rescue information	D07 D10
Structural energy storage and new materials	Crash load paths, damage sensitivity, fire interaction and production equivalence	D03 D04 D07 D11
Digital twins and generated scenarios	Model validity, independent physical correlation and reproducible calculations	D08 D12 plus the physical domain supported
Reconfigurable cabins and novel interfaces	Permitted occupancy, restraint coverage, task usability and power-loss escape	D01 D05 D10
Unlisted emerging technology	Hazard inventory, applicability decision and validated method before rating use	Assigned under Clause 33

H.1 Domain ownership shall follow the measured safety outcome. A technology appearing in several domains shall not receive duplicate points for one measurement. A gate may span domains only where its separate effect is explicitly defined.

H.2 If a technology is absent, the approved category branch shall specify the applicable equivalent outcome and preserve the fixed domain maximum. Absence of a particular implementation shall not earn automatic points or justify skipping a common safety requirement.

H.3 The technology coverage record shall identify assessed operating modes, software and model versions, interfaces, energy configuration and any disabled capability. The public letter alone shall not be used as proof that every feature or future update has been tested.