

112

ROADMAP

for **112/eCall Implementation**
and Emergency Response to
Transport Incidents Involving
Dangerous Goods in
the Western Balkans

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Acronyms and Abbreviations

Acronym	Full Name
112	Single European Emergency Number
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AML	Advanced Mobile Location
CAD	Computer-Aided Dispatch
CBRN	Chemical, Biological, Radiological and Nuclear
CECIS	Common Emergency Communication and Information System
COTIF	Convention concerning International Carriage by Rail
DGSA	Dangerous Goods Safety Adviser
eCall	In-vehicle emergency call system (pan-European)
EECC	European Electronic Communications Code
EMS	Emergency Medical Services
ERICard	Emergency Response Intervention Card
EU	European Union
HAZMAT	Hazardous Materials
ICS	Incident Command System
IPA	Instrument for Pre-Accession Assistance
LPG	Liquefied Petroleum Gas
MNO	Mobile Network Operator
MSD	Minimum Set of Data
NFPA	National Fire Protection Association
NG112	Next Generation 112
OCC112	Operational-Communication Centre 112
OSOCC	On-Site Operations Coordination Centre
PPE	Personal Protective Equipment
PSAP	Public Safety Answering Point
RID	Regulation concerning the International Carriage of Dangerous Goods by Rail
SOP	Standard Operating Procedure
TA	Technical Assistance
TAIEX	Technical Assistance and Information Exchange
TCT	Transport Community Treaty
TDG	Transport of Dangerous Goods
TEN-T	Trans-European Transport Network
TPED	Transportable Pressure Equipment Directive
UCPM	Union Civil Protection Mechanism
UNECE	United Nations Economic Commission for Europe
VIN	Vehicle Identification Number

Executive Summary

The transport of dangerous goods is essential to the economic development of the Western Balkans. Every day, thousands of tonnes of chemicals, fuels, gases and other hazardous materials traverse the roads, railways and waterways connecting our region to the broader European market. While the vast majority of these shipments reach their destinations safely, the potential consequences of an incident demand that we maintain the highest standards of prevention, preparedness and response capability.

Recent incidents in the region (from the 2022 ammonia derailment near Pirot to the 2016 LPG explosion in Hitrino) provide stark reminders of these risks. They share common threads: infrastructure challenges, limited specialised response capacity, and gaps in cross-border coordination. But they also reveal an opportunity: by working together under the Transport Community framework, we can build systems that protect our citizens more effectively than any Regional Partner could achieve alone.

This Roadmap represents a comprehensive approach to that challenge. It brings together two interconnected priorities: the implementation of 112/eCall emergency communication infrastructure, and the development of coordinated emergency response capabilities for dangerous goods incidents. These are not separate initiatives — they are two dimensions of the same objective. Effective emergency response begins with rapid and reliable notification through the 112 system; that notification must then trigger a well-prepared, professionally equipped and regionally coordinated response.

The document is structured accordingly. Part One establishes the Regional Framework for Emergency Response to Transport Incidents Involving Dangerous Goods, setting out common principles, assessment of current capabilities, preventive measures, response protocols, and the governance arrangements through which each Regional Partner will develop its own National Dangerous Goods Emergency Response Plan. The Working Group on Dangerous Goods Emergency Response, established under the TDG Technical Committee, will guide this process, ensuring that National Plans are both tailored to local circumstances and consistent with regional standards.

Part Two provides the 112/eCall Implementation Fiches - detailed assessments of emergency communication infrastructure, identifying current capabilities, gaps, improvement measures, and indicative costs. This technical foundation underpins the entire emergency response framework; without reliable 112 systems, Advanced Mobile Location, and eCall capability, even the best-prepared response teams cannot be deployed effectively.

The successful implementation of this Roadmap will require sustained commitment from all Regional Partners, continued investment in infrastructure and training, and ongoing cooperation at both technical and political levels. The consultations that shaped this document — including valuable technical contributions from national authorities - demonstrate that this commitment exists. The Transport Community Permanent Secretariat stands ready to support these efforts through technical assistance, coordination, and progress monitoring.

Our shared objective is clear: by 2028, every Regional Partner should have a functioning 112 system meeting EU standards, operational eCall capability, and an endorsed National Dangerous Goods Emergency Response Plan integrated with cross-border coordination mechanisms. This Roadmap shows the path to achieving that objective.

Regional Framework for Emergency Response to Transport Incidents Involving Dangerous Goods in the Western Balkans

Background

The transport of dangerous goods is essential to the economic development of the Western Balkans region. Every day, thousands of tons of chemicals, fuels, gases, and other hazardous materials traverse the roads, railways, and waterways, by air and motorways of sea, in maritime (waterborne), connecting the Regional Partners to each other and to the broader European market. While the vast majority of these shipments reach their destinations safely, the potential consequences of an incident involving dangerous goods demand that we maintain the highest standards of prevention, preparedness, and response capability.

Recent history provides stark reminders of these risks. The December 2022 ammonia train derailment near Pirot, Serbia, claimed two lives, hospitalized over fifty people, and forced the evacuation of an entire city. The 2016 LPG tank car explosion in Hitrino, Bulgaria – just 30 kilometers from the Serbian border – killed seven people and destroyed dozens of homes, demonstrating how quickly such incidents can have cross-border implications. Further afield, the 2009 Viareggio LPG disaster in Italy, which killed 32 people when a derailed tank car exploded in a residential area, catalysed major EU rail safety reforms and serves as a sobering reminder of the catastrophic potential of dangerous goods transport incidents.

These incidents share common threads: infrastructure deficiencies, proximity of populations to transport corridors, limited specialised response capacity, and gaps in emergency coordination. They underscore both the urgency and the opportunity before us. This Regional Framework represents a comprehensive effort to learn from such incidents and to establish a harmonised foundation upon which each Regional Partner will develop its own National Dangerous Goods Emergency Response Plan. The Framework sets common standards and principles while allowing for adaptation to national circumstances, institutional arrangements and existing emergency coordination systems.

The Plan builds upon the significant progress already made in implementing the 112 Single European Emergency Number and eCall systems across the region, recognizing that effective emergency response begins with rapid and reliable notification. Developed through the Transport Community framework and informed by European Union best practices, this Plan is designed to complement rather than replace national emergency response systems. It establishes minimum standards, promotes interoperability, and creates mechanisms for cross-border cooperation that recognise the interconnected nature of our transport networks and the shared responsibility we bear for the safety of our citizens.

The successful implementation of this Plan will require sustained commitment from all Regional Partners, investment in capabilities and training, and ongoing cooperation at both technical and political levels. The Transport Community Permanent Secretariat stands ready to support these efforts through technical assistance, coordination, and progress monitoring.

Introduction and Strategic Context

1. Purpose and Scope

Purpose: This Regional Framework establishes common principles, standards and procedures for preventing, preparing for, and responding to transport incidents involving dangerous goods across the Western Balkans. It serves as the foundation upon which each Regional Partner will develop its own National Dangerous Goods Emergency Response Plan, adapted to national circumstances and institutional arrangements. The Framework serves four fundamental purposes:

- **Assessment of Capabilities:** It provides a systematic assessment of existing emergency response capabilities across all Regional Partners, identifying both strengths to build upon and critical gaps that must be addressed. Understanding our current situation is essential to making informed decisions about where to focus resources and efforts.
- **Common Standards and Cooperation:** It establishes common standards and procedures that enable Regional Partners to work together effectively when incidents occur. Dangerous goods do not respect borders, and neither should our response capabilities. A chemical spill on a river, a toxic cloud from a rail accident, or a fire involving hazardous cargo can quickly become a cross-border emergency requiring coordinated action.
- **Roadmap to EU Compliance:** It provides each Regional Partner with a clear roadmap of actions needed to achieve full compliance with EU standards for dangerous goods transport safety and emergency response. As all Regional Partners progress on their European integration paths, alignment with the EU acquis in this area is both a requirement and an opportunity to enhance public safety.
- **Foundation for National Plans:** It provides the common foundation upon which each Regional Partner will develop its own National Dangerous Goods Emergency Response Plan. Through the Working Group on Dangerous Goods Emergency Response established under the TDG Technical Committee, Regional Partners will work collaboratively to develop these National Plans while ensuring consistency with regional standards and cross-border interoperability.

Scope: This Framework applies to all six Regional Partners of the Transport Community (Albania, Bosnia and Herzegovina, Kosovo¹, Montenegro, North Macedonia, and Serbia) and is available to Observing Participants who are working to align their practices with these regional standards.

The Plan covers emergency response to incidents involving dangerous goods transported by:

- **Road transport:** ADR – the European Agreement concerning the International Carriage of Dangerous Goods by Road.
- **Rail transport:** RID – the Regulation concerning the International Carriage of Dangerous Goods by Rail (Annex C to the COTIF Convention).
- **Inland waterways:** ADN – the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

While the Plan focuses on transport-related incidents, it recognizes that such incidents may occur at or near fixed facilities (e.g. loading/unloading areas, marshalling yards, ports).

¹ This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

Therefore, it provides for coordination with facility-based emergency response systems governed by the SEVESO III Directive framework (Directive 2012/18/EU on control of major accident hazards involving dangerous substances), even though SEVESO III is outside the transport acquis, due to its code 15.10.20.50 covering environment, consumers and health protection, environment, pollution and nuisances, chemicals, industrial risk and biotechnology.

2. Relationship to 112/eCall Infrastructure

2.1 The Foundation: 112 Single European Emergency Number

Effective emergency response begins with rapid and reliable notification. The 112 Single European Emergency Number provides this foundation by ensuring that anyone involved in or witnessing an incident can immediately reach emergency services, regardless of which country they are in or which mobile network they use. The Transport Community has been working intensively with Regional Partners to implement and enhance 112 systems across the region. This work includes upgrading Public Safety Answering Points (PSAPs), ensuring caller location information is automatically provided (e.g. through Advanced Mobile Location), and training personnel to handle emergency calls effectively. The Regional Roadmap for 112/eCall Implementation, developed in parallel with this Plan, provides the detailed technical and organizational framework for this infrastructure.

For dangerous goods incidents specifically, the 112 system plays several critical roles:

- **Rapid notification:** Drivers, bystanders, or other witnesses can immediately report incidents, reducing the time between occurrence and response initiation.
- **Accurate location:** Advanced Mobile Location (AML) and cell-based positioning ensure responders know exactly where the incident has occurred, even in unfamiliar or remote locations.
- **Information gathering:** Trained 112 operators will elicit critical information from callers, including the presence of hazardous goods placards or labels, visible damage, injured persons, and environmental conditions.
- **Dispatch coordination and operational coordination:** 112 centres serve not only as call-taking facilities but as operational coordination hubs responsible for alerting and linking police, fire services, emergency medical services and civil protection resources. They perform operational coordination between emergency services, manage the dispatch of appropriate response units, and handle international communication and cooperation with counterpart centres in neighbouring countries. This coordination role ensures that fire services, medical teams, police, and specialised HAZMAT resources are deployed appropriately and without delay, while maintaining situational awareness across all responding agencies.

2.2 Enhanced Capability: eCall for Dangerous Goods Transport

The eCall system, which automatically contacts emergency services in the event of a severe road accident, represents a significant enhancement for dangerous goods transport safety. When a vehicle equipped with eCall is involved in a collision or other triggering event, the system automatically:

- Establishes a voice connection with the nearest PSAP.
- Transmits a minimum set of data (MSD) including precise location, time, vehicle identification, and direction of travel.
- Allows two-way communication between vehicle occupants and emergency operators.

For vehicles transporting dangerous goods, there is potential to include additional information in the eCall data transmission. Future enhancements could, for example, transmit UN numbers identifying the specific dangerous goods being carried. This would enable PSAPs to immediately alert specialised HAZMAT response teams and provide responders with substance-specific guidance before they arrive on scene.

2.3 Integration of Notification and Response

This Emergency Response Plan is designed to integrate seamlessly with the 112/eCall infrastructure. In essence, the 112/eCall Roadmap ensures that Regional Partners have the technical infrastructure and trained personnel to receive emergency notifications rapidly and accurately (answering questions like: How do we ensure calls are answered quickly? How do we locate callers precisely? How do we transfer information to responders efficiently?). Meanwhile, this Emergency Response Plan ensures that once notification is received, Regional Partners have the capabilities, procedures, and resources to respond effectively (answering questions like: What specialised resources do we need? How should responders approach a dangerous goods incident? How do we coordinate when incidents cross borders?). Together, these two initiatives provide a complete framework from the moment an incident occurs through the completion of emergency response operations.

2.4 Incident Command and Operational Coordination

Multi-agency incidents involving dangerous goods require clearly defined operational command arrangements. This Plan recommends that Regional Partners adopt incident management principles consistent with internationally recognised systems, such as the Incident Command System (ICS) or equivalent European frameworks. Key elements include: unified command when multiple agencies respond; clearly designated incident commander with authority to coordinate all response activities; defined command structure with operations, planning, logistics and finance/administration functions; standardised terminology and communication protocols; and scalable organisation that can expand or contract based on incident complexity. Each Regional Partner should develop or adapt national incident command procedures that ensure interoperability with neighbouring countries and compliance with EU Civil Protection Mechanism operational procedures.

2.5 Operational Protocols for 112 Operators

Given the critical importance of accurate information gathering during dangerous goods incidents, this Plan recommends the development of standardised call-taking protocols and checklists specifically designed for 112 operators handling such emergencies. These protocols should ensure consistent information collection including: identification of hazardous materials markings (UN number, ADR placards, warning labels); vehicle type and condition (tank truck, container, package); nature of release (leak, spill, fire, explosion); environmental factors (weather, terrain, proximity to water or populated areas); presence of injured persons and their symptoms; and caller location and safe distance assessment. Regional Partners should develop harmonised operator checklists that can be incorporated into Computer-Aided Dispatch (CAD) systems, ensuring that critical information is systematically collected and immediately transmitted to responding units. Joint training of 112 operators on dangerous goods recognition and questioning protocols should be included in the regional training programme.

2.6 Cross-Border Communication Between Emergency Communication Centres

Many transport corridors in the Western Balkans are located close to international borders. Emergency communication centres (PSAPs/112 centres) play a critical role in early information exchange between neighbouring countries when dangerous goods incidents occur near border areas or have potential transboundary effects. This Plan recommends that Regional Partners establish direct communication links between 112 centres in border regions, enabling rapid notification without requiring escalation through diplomatic channels. Key elements include: exchange of contact details and communication procedures between neighbouring PSAPs; agreed notification thresholds (when to alert the neighbouring country); secure communication channels (telephone, email, dedicated systems); multilingual capability or agreed working language; and regular testing of cross-border communication procedures. The Transport Community Secretariat should facilitate the development of bilateral PSAP communication protocols and organise joint exercises to test cross-border notification and coordination.

2.7 Integration with National Emergency Coordination Systems

Dangerous goods incidents may trigger additional emergency coordination mechanisms beyond the standard emergency response, including activation of national crisis management centres, civil protection authorities, or specialised coordination structures for large transport accidents or environmental emergencies. This Plan should be understood as complementary to, not a replacement for, existing national emergency coordination frameworks. Each Regional Partner should clarify in their National Dangerous Goods Emergency Response Plan (to be developed under this Framework) how the proposed response arrangements integrate with: national civil protection or crisis management systems; environmental emergency response procedures; major transport accident protocols; Seveso III external emergency plans (where applicable); and other relevant sectoral emergency frameworks. The Working Group on Dangerous Goods Emergency Response (Section 18.2) will develop guidance on ensuring coherent integration between this regional framework and national systems.

3. Legal and Policy Framework

3.1 Transport Community Treaty Obligations

The Treaty establishing the Transport Community obliges the Western Balkan Regional Partners to progressively align their transport legislation and standards with the EU acquis. In the area of dangerous goods transport and emergency response, this means alignment with several key EU legal instruments that are part of the Transport Community Treaty's Annex I. The core relevant acquis includes:

Legal Instrument	Scope and Requirements
Directive 2008/68/EC, as amended	Framework directive for inland transport of dangerous goods; mandates application of ADR, RID, and ADN for road, rail, and waterway transport
Directive 2010/35/EU, as amended	Transportable pressure equipment directive; establishes conformity assessment and safety standards for pressure receptacles, tanks, and valves
Directive (EU) 2022/1999 (codification)	Uniform procedures for roadside checks of dangerous goods transport; codifies and updates the former Directive 95/50/EC with harmonised checklist and infringement classification
Directive 2004/54/EC, as amended	Minimum safety requirements for tunnels in the trans-European road network; includes ADR tunnel restriction codes (A-E)
Commission Regulation (EU) No 1303/2014, as amended	Relating to 'safety in railway tunnels' of the rail system of the European Union, as amended, and its relevant session 2.2.1. 'Hot' incidents: Fire, explosion followed by fire, emission of toxic smoke or gases; session 2.3. The role of emergency response services; in a 'hot' incident type, and in a 'cold' incident type; and respective session 4.4.1. Emergency rule, among others.

Each Regional Partner is at a different stage of transposing and implementing these directives, but all have committed under the Transport Community Treaty to achieve full alignment. Notably, Directive 2008/68/EC, as amended, provides the overarching framework by effectively making the ADR/RID/ADN rules part of domestic law, while Directive (EU) 2022/1999 ensures those rules are being enforced on the ground through regular inspections.

3.2 International Agreements

In addition to the EU directives above, all Regional Partners have acceded to the key international agreements governing dangerous goods transport. Adherence to these agreements is fundamental and complements the EU acquis alignment:

- ADR (Road): The European Agreement concerning the International Carriage of Dangerous Goods by Road, under UNECE, provides the comprehensive regulatory framework for road transport of dangerous goods, including detailed provisions on classification, packaging, labeling, vehicle construction and equipment, driver training, and transport documentation. All Regional Partners apply ADR for international road

transport, and via Directive 2008/68/EC, amended these rules also cover domestic transport and biannual revision of ADR due to the scientific and technological progress.

- RID (Rail): The Regulations concerning the International Carriage of Dangerous Goods by Rail (Annex C to COTIF) provide equivalent provisions for rail transport. All Regional Partners engaged in international rail transport of dangerous goods follow RID; alignment with EU rules ensures these provisions also apply nationally.
- ADN (Inland Waterways): The European Agreement on the International Carriage of Dangerous Goods by Inland Waterways, relevant for countries with inland waterways. ADN's provisions are likewise brought into national law via Directive 2008/68/EC amended for those Regional Partners with river transport (notably the Danube for Serbia).

These agreements establish not only technical requirements but also basic safety responsibilities. For example, ADR Chapter 1.4 affirms that all parties (consignors, carriers, consignees, loaders, etc.) share responsibility for the safety of dangerous goods transport. ADR also includes provisions for emergency situations – drivers must carry instructions in writing (emergency response guidance for initial actions) and there are obligations to notify authorities of serious incidents (ADR 1.8.5). Although ADR's Part 8 primarily covers requirements for transport operations and vehicle crews, the spirit of the agreement is to ensure preparedness for accidents. Tools like Emergency Response Intervention Cards (ERICards), while not mandated by law, are widely used as a best practice to guide first responders in initial actions for specific substances.

3.3 Complementary EU Safety and Civil Protection Frameworks

Beyond the Transport Community's strict *acquis* requirements, several EU directives and initiatives, though not formally part of the Transport Community Treaty *acquis*, are highly relevant to improving dangerous goods transport safety and emergency response. Regional Partners are encouraged to take these into account as best practices:

- Seveso III Directive (2012/18/EU): This EU directive on the control of major-accident hazards involving dangerous substances requires industrial facilities to have emergency plans and inform/prepare the public around those sites. While it applies to fixed installations, its principles of risk assessment, land-use planning, and emergency planning can inform preparedness for transport hubs and loading/unloading areas that handle large quantities of dangerous goods.
- Union Civil Protection Mechanism (Decision No. 1313/2013/EU): The UCPM is an EU framework for cooperation in disaster response, which Western Balkan partners have joined as Participating States. Through the UCPM, Regional Partners can request and provide cross-border assistance for major emergencies and participate in training and exercises with EU Member States.
- eCall System for Vehicles (Regulation (EU) 2015/758): This regulation requires that new types of cars in the EU be equipped with the 112-based eCall in-vehicle system. While not yet mandatory for the Western Balkan partners, aligning with it ensures that vehicles transporting dangerous goods can benefit from automatic crash notification technology.

By considering these frameworks, the Regional Partners can go beyond the minimum *acquis* requirements and integrate European best practices into their national systems.

4. Guiding Principles

The following principles guide the development and implementation of this Regional Emergency Response Plan:

- **Prevention First:** The most effective emergency response is the one that never needs to occur. Therefore, the Plan places strong emphasis on preventive measures – including infrastructure safety improvements, rigorous personnel training, and proactive identification of high-risk routes and scenarios.
- **Scalable Response:** Not all incidents are equal. A minor leak from a damaged package requires a fundamentally different approach than a major release from a derailed tank car in an urban area. This Plan establishes a tiered response framework to ensure resources are matched to incident severity.
- **Interoperability:** Emergency responders from different agencies and different countries must be able to work together effectively. This requires common terminology, compatible equipment, harmonised procedures, and mutual recognition of qualifications.
- **Subsidiarity:** Response should be managed at the lowest appropriate level. Local responders are first on scene and know their communities best. National and regional resources supplement rather than replace local capability.
- **Continuous Improvement:** Every incident, exercise, and near-miss provides learning opportunities. This Plan establishes mechanisms for capturing lessons learned, sharing best practices, and updating procedures based on experience.

Current Situation Assessment

5. Regional Overview

5.1 Transport of Dangerous Goods in the Western Balkans

The Western Balkans region serves as a crucial land bridge connecting Central Europe with Southeastern Europe and beyond. Several Trans-European Transport Network (TEN-T) corridors traverse the region, carrying significant volumes of dangerous goods:

- Corridor X: (Salzburg – Ljubljana – Zagreb – Belgrade – Niš – Skopje – Thessaloniki) is the main north-south artery. It carries large quantities of petroleum products, industrial chemicals, and compressed gases.
- Corridor VIII: (Bari – Durrës – Tirana – Skopje – Sofia) provides east-west connectivity. As Albanian port capacity expands, this corridor is seeing increasing dangerous goods traffic.
- Corridor Vc: (Budapest – Sarajevo – Ploče) connects Bosnia and Herzegovina to the Adriatic Sea. Significant flows on this route include chemical industry feedstocks and products.
- Route 7: (Pristina – Prizren – Albania border) is an emerging key route for Kosovo* and Albania.
- •Route 2: Podgorica-Tirana/Durres, mainly with subsystems authorized in accordance with the EU and their common projects for new, renewed or upgraded subsystems. Albania and Montenegro raised capacities on the adaptation of the ADR and RID, and implementation of the IMDG code for dangerous goods, by multimodality, in May 2025.

Major categories of dangerous goods transported in the region include: petroleum fuels and other flammable liquids (ADR Class 3), liquefied and compressed gases such as LPG, ammonia, and chlorine (Class 2), corrosive substances like acids (Class 8), and various toxic or environmentally hazardous chemicals (Classes 6.1 and 9).

5.2 Emergency Response Landscape

All Regional Partners have established civil protection and emergency management systems, though their structure, resources, and capabilities vary considerably. Common patterns and challenges across the region include:

- Institutional Fragmentation: Emergency response responsibilities are often divided among multiple agencies. Coordination mechanisms for complex incidents are not always clearly defined or tested.
- Limited HAZMAT Specialization: While all partners have basic firefighting and rescue services, specialised hazardous materials (HAZMAT) response teams are few. In some cases, military CBRN units fill the gap.
- Equipment Gaps: Critical equipment for chemical incident response (such as Level A/B encapsulated suits, chemical detectors, mass decontamination units) is often lacking or available only in limited quantity.
- Training Deficits: First responders often lack advanced training specific to dangerous goods incidents beyond general awareness.
- Cross-Border Integration: Specific arrangements for dangerous goods incidents (joint response plans, mutual aid agreements for HAZMAT teams) are underdeveloped.

5.3 Assessment Methodology

The assessment of current capabilities and gaps draws on multiple information sources including Ready2Respond (R2R) Diagnostics, Transport Community Progress Reports, academic research, EU CBRN Centres of Excellence assessments, incident reports and after-action reviews, and inputs from national authorities.

Using these sources, each Regional Partner's section provides a narrative assessment and a rating of capabilities in key areas using the following classification:

Rating	Definition
✓ ADEQUATE	Meets minimum EU standards or established good practice; capability is functional and operational
● DEVELOPING	Some capabilities exist but important improvements are needed; partially functional or in progress
✗ CRITICAL GAP	Significant deficiencies requiring urgent action; capability is absent or non-functional
★ OPPORTUNITY	Notable strength, centre of excellence, or unique asset that can be leveraged regionally

6. Incident Case Studies

Understanding past incidents is essential for building effective prevention and response capabilities. The following case studies illustrate common failure patterns and lessons that inform this Plan:

CASE STUDY: Pirot Ammonia Derailment

Location: Pirot, Serbia (5 km from Bulgarian border) | **Date:** December 2022

- Incident: Freight train carrying ~900 tonnes of ammonia derailed; ~20 tonnes leaked
- Casualties: 2 deaths, 51-56 hospitalized with respiratory injuries
- Impact: City-wide evacuation ordered; dense ammonia cloud caused 9 secondary road accidents
- Root cause: Transport Minister acknowledged poor railway infrastructure condition as cause
- Context: Niš-Dimitrovgrad section had 30 km/h speed limits and 3+ DG incidents in prior year
- Lessons: Need for infrastructure investment, pre-positioned neutralizing agents, improved public warning systems, civilian HAZMAT capability

CASE STUDY: Hitrino LPG Explosion

Location: Hitrino, Bulgaria (30 km from Serbian border) | **Date:** December 2016

- Incident: Freight train with LPG tank cars derailed and exploded in village centre at 5:30 AM
- Casualties: 7 deaths, 29 injured; 50+ buildings destroyed or damaged
- Root cause: Train traveling at 94 km/h in 40 km/h zone; faulty track switching
- Cross-border relevance: Explosion felt in Serbia; demonstrates how quickly incidents near borders can have transnational implications
- Response gaps: Limited HAZMAT capability in rural area; delayed specialised response
- Lessons: Speed enforcement critical; need for corridor-specific emergency plans; cross-border notification protocols

CASE STUDY: Viareggio LPG Disaster

Location: Viareggio, Italy | **Date:** June 2009

- Incident: Freight train with LPG derailed in residential area; tank car ruptured and ignited
- Casualties: 32 deaths, 25+ injured; entire neighborhood destroyed by fireball
- Root cause: Faulty wheelset bearing on tank car; inadequate maintenance oversight
- EU impact: Catalysed major reforms including Recast Railway Safety Directive and enhanced tank car standards
- Response challenges: Massive fire overwhelmed local resources; multiple agencies coordination difficulties
- Lessons: Infrastructure and rolling stock maintenance critical; residential proximity to rail corridors is key risk factor; need for rapid-response HAZMAT capability

7. Common Failure Patterns

Analysis of the case studies above and other dangerous goods incidents reveals recurring failure patterns that this Plan seeks to address:

7.1 Infrastructure Deficiencies

Poor track condition, inadequate maintenance, and deferred upgrades are common precursors to rail incidents. The Piroet derailment occurred on a section with known infrastructure problems and pre-existing speed restrictions. Similarly, the Hitrino disaster involved faulty track switching equipment. For road transport, inadequate crash barriers, poor signage, and challenging geometry contribute to accidents. Investment in infrastructure maintenance and safety upgrades is essential prevention.

7.2 Proximity of Population to Transport Routes

The Viareggio disaster illustrates the catastrophic consequences when dangerous goods incidents occur in densely populated areas. Rail lines and major roads often pass through or adjacent to residential neighborhoods, creating inherent risk. Land-use planning, routing decisions, and time-of-day restrictions can help manage this risk, but emergency preparedness must account for the reality that many incidents will occur near populated areas.

7.3 Limited Specialised Response Capability

In each case study, the initial response was hampered by limited HAZMAT-specific capabilities. Local fire services, while courageous, often lacked specialised equipment (gas-tight suits, detection instruments, decontamination units) and advanced training. Military CBRN units, where available, required time to mobilize. The gap between the arrival of first responders and the deployment of specialised capabilities represents a critical vulnerability.

7.4 Absence of Corridor-Specific Emergency Plans

None of the incidents occurred in areas with pre-established emergency response plans specific to dangerous goods transport corridors. General civil protection plans existed, but detailed, scenario-specific protocols (for ammonia release, LPG explosion, etc.) with pre-designated resources, evacuation zones, and coordination arrangements were lacking. The improvised nature of responses contributed to delays and coordination difficulties.

These patterns inform the preventive measures (Part III) and response framework (Part IV) of this Plan, with specific recommendations to address each vulnerability.

8. Assessment of each Regional Partner

8.1 Albania

Albania has a centralized National Civil Protection Agency under the Ministry of Defence, which is leading disaster response reforms. A dedicated Dangerous Goods Unit is nascent. Strengths include recent investment in emergency operations centres and national 112 law, Law No. 45/2019 On Civil Protection, partially aligning inter alia, the Directive 2012/18/EU. Gaps include the need for at least two dedicated HAZMAT response teams (currently ad-hoc arrangements with fire brigades) and completion of a national training centre for civil protection (under development with donor support). Albania is rated Developing in most areas, with a Critical Gap in specialised equipment (as of 2025). Priority actions: formalize dangerous goods emergency protocols, establish HAZMAT units in Tirana and at the main port of Durrës, and operationalize the training centre with HAZMAT training capability.

Component	Status	Rating
HAZMAT Team Capability	No civilian capability; ad-hoc fire brigade arrangements	✗ CRITICAL GAP
ADR/RID Implementation	ADR transposed; not published in Albanian language	🟡 DEVELOPING
Roadside Inspection	Basic capability exists	🟡 DEVELOPING
DGSA Certification System	Established for road, rail, IWW	✓ ADEQUATE
Emergency Response Plans	Fragmented across institutions	✗ CRITICAL GAP
Cross-border Protocols	Limited bilateral agreements	🟡 DEVELOPING
Specialised Equipment	Outdated or expired CBRN equipment (2023 TAIEX)	✗ CRITICAL GAP
112 System	Partial (Tirana and Durrës only); limited capacity outside capital	🟡 DEVELOPING

8.2 Bosnia and Herzegovina

Bosnia and Herzegovina's complex constitutional setup (state, two entities, Brčko District) poses coordination challenges. There is no unified 112 system yet – a major gap – and emergency response responsibilities are fragmented. On a positive note, Bosnia and Herzegovina became a full Participating State in the UCPM in 2022, boosting access to EU resources. The first responders have dealt with industrial accidents (e.g. in the chemicals sector) and have some capabilities, but dangerous goods transport planning is in early stages. Rated Developing but with a Critical Gap in emergency communications (112). Priority actions: implement a unified 112 number country-wide, develop a state-level framework for dangerous goods response (to coordinate entity-level civil protection efforts), and finalize a CBRN action plan that includes HAZMAT transport scenarios.

Component	Status	Rating
HAZMAT Team Capability	Entity-level only; no state coordination	✗ CRITICAL GAP
ADR/RID Implementation	Inconsistent across entities	🟡 DEVELOPING
Roadside Inspection	Limited coordination between entities	✗ CRITICAL GAP
DGSA Certification System	Entity-based systems	🟡 DEVELOPING
Emergency Response Plans	No unified state plan	✗ CRITICAL GAP
Cross-border Protocols	Bilateral with Croatia, Serbia	🟡 DEVELOPING
UCPM Participation	Full Participating State since 2022	★ OPPORTUNITY
112 System	Not implemented	✗ CRITICAL GAP

8.3 Kosovo*

Kosovo has a relatively new Emergency Management Agency and relies on the established body for Civil Emergency component for CBRN expertise. A National Response Plan exists but dangerous goods are not specifically addressed yet. Equipment for HAZMAT incidents is limited, but there is strong interest in training (Kosovo agencies have participated actively in regional CBRN trainings). Kosovo achieved a notable regional milestone by publishing the first Albanian-language translation of ADR and RID in 2023-2024, a resource that benefits the entire Albanian-speaking region. Rated Developing, with Critical Gaps in equipment and formal procedures. Priority actions: procure basic HAZMAT protective equipment and detection devices, train at least 30 responders to the HAZMAT Technician level, and establish formal mutual aid agreements with neighbors (given Kosovo's small size, cross-border help is crucial).

Component	Status	Rating
HAZMAT Team Capability	KFOR provides limited support	✗ CRITICAL GAP
ADR/RID Translation	First Albanian translation published 2023-24	★ OPPORTUNITY
Roadside Inspection	Basic capability	🕒 DEVELOPING
DGSA Certification System	Under development	🕒 DEVELOPING
Emergency Response Plans	National framework exists; TDG not addressed	🕒 DEVELOPING
Cross-border Protocols	Limited (political constraints)	✗ CRITICAL GAP
112 System	Full coverage since 2002 (oldest in region)	✓ ADEQUATE
PSAP Infrastructure	5 regional Emergency Operations Centres	✓ ADEQUATE

8.4 Montenegro

Montenegro has experience with tunnel emergencies and industrial accidents (like the 2019 derailment of a fuel train in a tunnel). Its Civil Protection Directorate is comparatively well-organised, and Montenegro has made progress in ADR implementation and tunnel safety (some upgrades on the Bar-Boljare highway project). Montenegro has established nationwide coverage of the 112 system through the Operational-Communication Centre (OCC112), which serves as a coordination hub capable of coordinating responses between emergency services and provides a single entry point for emergency communications. Advanced Mobile Location (AML) is operational via SMS transmission through secure connections with mobile network operators, providing accurate caller location based on device GPS. The eCall system is functional and capable of receiving the Minimum Set of Data (MSD), including vehicle location, VIN, time of incident and direction of travel. OCC112 is currently implementing the “Improving disaster resilience and continuity of the IT infrastructure and services of the Operational and Communication Centre 112” project in cooperation with the World Bank, evaluating infrastructure and identifying steps toward Next Generation 112 transition. However, civilian HAZMAT team capacity is limited – Montenegro relies entirely on its armed forces for hazardous materials response. Rated Developing overall. Priority actions: develop a dedicated civilian HAZMAT unit (currently relying on military support or ad-hoc fire units), complete classification and safety upgrades for the major road tunnels (e.g. those on Bar–Boljare), and establish a national training centre for multi-agency emergency response (proposed to be built leveraging EU IPA funds).

Component	Status	Rating
HAZMAT Team Capability	Military only (no civilian)	✗ CRITICAL GAP
ADR/RID Implementation	ADR transposed	✓ ADEQUATE
Roadside Inspection	Regular checks; regional workshop host 2025	★ OPPORTUNITY
DGSA Certification System	Established	✓ ADEQUATE
Emergency Response Plans	National plans exist	● DEVELOPING
Cross-border Protocols	UCPM participant	✓ ADEQUATE
112 System	Full nationwide coverage (OKC 112)	✓ ADEQUATE
AML Capability	Operational via SMS; HTTPS pending	✓ ADEQUATE
eCall Capability	Operational; MSD reception functional; NG eCall pending	✓ ADEQUATE

8.5 North Macedonia

North Macedonia has a reasonably well-developed crisis management system, including the Crisis Management Centre and the Protection and Rescue Directorate. It achieved a major milestone in February 2022 by becoming one of the first countries in the Western Balkans to deploy a near-complete Next Generation 112 (NG112) system, with end-to-end IP-based call routing, GIS integration, and multilingual support. The system currently handles 1,400–2,000+ calls daily, with 94.57% answered within 10 seconds. However, there is a noted shortage of firefighters and responders (especially after a wave of retirements). The March 2025 Kočani nightclub fire, which resulted in 63 deaths and 193 injuries, exposed significant capacity gaps – fire services are understaffed and equipped predominantly with second-hand vehicles. The incident triggered activation of the EU Civil Protection Mechanism for medical evacuations. ADR has not been translated into Macedonian, though translation has been budgeted for 2025. Rated Developing, with a Critical Gap in human resources. Priority actions: address the responder staffing shortfall (recruit and train approximately 340 new firefighters), continue fleet modernization with HAZMAT equipment focus, and complete the ADR translation.

Component	Status	Rating
HAZMAT Team Capability	Limited (understaffed fire services)	🚫 DEVELOPING
ADR/RID Implementation	ADR not in Macedonian (budgeted 2025)	🚫 DEVELOPING
Roadside Inspection	Systematic inspections	✓ ADEQUATE
DGSA Certification System	Established	✓ ADEQUATE
NG112 System	Among the first in the Western Balkans to implement NG112 (Feb 2022)	★ OPPORTUNITY
eCall Capability	PSAP ready; regulatory framework pending	🚫 DEVELOPING
Human Resources	Critical staffing shortage in fire services	✗ CRITICAL GAP
Cross-border Protocols	UCPM participant, bilateral agreements	✓ ADEQUATE

8.6 Serbia

Serbia, the largest partner in the region, has considerable experience and some unique assets (e.g. a well-equipped firefighting unit within the Ministry of Interior, and army CBRN units). The December 2022 Pirot ammonia derailment led to an intensive review and several recommendations ('Pirot lessons learned') which are being implemented. The incident involved a freight train carrying approximately 900 tonnes of ammonia that derailed, with approximately 20 tonnes leaking. Two people died and 51-56 were hospitalized. The Transport Minister explicitly acknowledged that the cause was related to the poor condition of railway infrastructure. Strengths include an existing training centre for emergency management and recent procurement of decontamination equipment. Gaps persist in fully developing civilian HAZMAT teams (beyond the military's role) and in engaging the private sector. Serbia's 112 system launched as a pilot in July 2024 but does not yet meet EU standards – calls receive an automated message before forwarding to police, while legacy numbers (192, 193, 194) remain primary. Rated Developing to Adequate in several areas. Priority actions: fully implement all Pirot incident recommendations, establish civilian regional HAZMAT teams in major cities, complete full 112 implementation, and formalize a chemical industry emergency support network.

Component	Status	Rating
HAZMAT Team Capability	Some specialised units; military CBRN available	🕒 DEVELOPING
ADR/RID Implementation	ADR/RID transposed	✓ ADEQUATE
Roadside Inspection	Regular inspections	✓ ADEQUATE
DGSA Certification System	Established	✓ ADEQUATE
Training Infrastructure	Existing emergency management training centre	★ OPPORTUNITY
Emergency Response Plans	National framework; Pirot lessons implementing	🕒 DEVELOPING
112 System	Pilot since July 2024; legacy numbers remain primary	🕒 DEVELOPING
Rail Infrastructure Safety	Critical condition on some TDG routes (Pirot cause)	✗ CRITICAL GAP

9. Common Gaps and Challenges

Across the regional assessments, several challenges are common to all or most Regional Partners. These challenges are best addressed through coordinated regional action and sharing of resources/expertise:

- 9.1 Limited Civilian HAZMAT Capacity: No Regional Partner yet has a fully-developed civilian hazardous materials response unit with 24/7 availability, dedicated equipment, and advanced training, independent of military or ad-hoc support. Regional Response: Develop at least one professional HAZMAT team in each Regional Partner's major population/industrial centre.
- 9.2 Equipment Deficits: Personal protective equipment (PPE) and detection instruments suitable for chemical emergencies are scarce region-wide. Regional Response: Coordinate procurement of standardised HAZMAT equipment; consider establishing regional caches that can be rapidly deployed.
- 9.3 Training Gaps: Dangerous goods incident training is inconsistent and often insufficient beyond the basic level. Regional Response: Develop a regional training programme including the creation of a Regional Dangerous Goods Training Centre or network.
- 9.4 Protocol and Procedure Gaps: Most Regional Partners do not yet have specific emergency response protocols for dangerous goods incidents. Regional Response: Develop model Standard Operating Procedures (SOPs) for common dangerous goods scenarios.
- 9.5 Cross-Border Coordination: While mechanisms exist (UCPM, bilateral treaties), specific cross-border arrangements for dangerous goods incidents are still underdeveloped. Regional Response: Develop bilateral contingency plans for key border areas and transit corridors.

By addressing these common gaps through Preventive measures and Response framework, the region can significantly raise its overall preparedness and reduce the risk of another serious incident causing wide-ranging harm.

Preventive Measures

Preventing incidents is the cornerstone of this Plan. Proactive measures not only avert disasters but also ensure that if an incident does occur, its impacts are minimised.

10. Infrastructure Safety Classification

10.1 Tunnel Classification and Restrictions

Road tunnels present special risks in case of dangerous goods accidents. ADR Chapter 8.6 and Directive 2004/54/EC require classifying tunnels into categories (A through E) based on which dangerous goods are permitted:

Category	Restrictions
A	No restrictions on dangerous goods
B	Restrictions on goods that can lead to very large explosions
C	Restrictions on goods leading to very large explosions, large explosions, or large toxic releases
D	Restrictions on Categories B/C goods, plus goods that can lead to large fires
E	Restrictions on all dangerous goods except certain exempted categories

Each Regional Partner should review its tunnel inventory and ensure classification is completed per ADR/Directive 2004/54/EC, as amended. Investments in tunnel safety (ventilation systems, fire detection and suppression, emergency exits, communication systems) should be prioritised for tunnels on corridors with significant dangerous goods traffic.

Note: Albania issued the Minister Order No. 138, dated 30.9.2025 On the Approval of the Regulation “On Technical specifications for Interoperability relating to ‘Safety in Railway Tunnels’ of Albanian railway system”, partially aligning the Directive 1303/2014, as amended.

10.2 High-Risk Route Identification and Management

Certain stretches of road or rail may pose elevated risk due to: high frequency of dangerous goods shipments, challenging geometry or road conditions, dense population along the route, or proximity to environmentally sensitive areas. Each Regional Partner should conduct risk mapping and subject high-risk routes to special preventive measures including infrastructure upgrades, traffic restrictions or rerouting, emergency infrastructure (spill containment, pre-positioned equipment), and enhanced monitoring and enforcement.

11. Personnel Training and Competence Framework

11.1 Responder Competency Levels

The Plan establishes a tiered competency framework aligned with NFPA 470 (2022 consolidated standard):

Level	Target Personnel	Core Competencies
Level Awareness	1: All emergency responders	Recognition of hazmat presence; protective actions; notification procedures; scene isolation
Level Operations	2: First responders (fire, police)	Defensive actions; scene safety; public protection; basic decontamination; resource coordination
Level Technician	3: HAZMAT specialists	Offensive operations; containment and plugging; technical decontamination; air monitoring
Level Specialist	4: Incident commanders, experts	Command procedures; technical analysis; resource coordination; risk assessment; scientific support

11.2 Dangerous Goods Inspector Training and Certification

Roadside inspectors, traffic police units, and railway safety inspectors must be well-trained to recognise violations. Under Directive (EU) 2022/1999, countries follow uniform procedures for roadside checks. Key actions include developing a uniform curriculum, setting minimum training hours and certification requirements, establishing a Regional Dangerous Goods Inspector Training Centre, and conducting joint inspections and mentoring exercises (such as the December 2025 Montenegro–Albania border crossing exercise).

12. Chemical Industry Emergency Support Networks

This Plan seeks to formalize a Regional Chemical Industry Emergency Support Network modeled on Germany's TUIS (operational since 1982 with approximately 130 participating company locations) and the European ICE network coordinated by Cefic. Key components include: an emergency advisory hotline for first responders, on-scene assistance agreements with major chemical facilities, information sharing (Safety Data Sheets in local languages), and joint training and exercises with industry.

Moreover, a TAIEX Regional Workshop on 112 & e-Call, held in Skopje, North Macedonia, on 21 - 22 February 2024 with the auspices of the transport community, and the EU directorates.

13. Public Awareness and Community Preparedness

Key measures include: targeted awareness campaigns in communities along major dangerous goods routes, local emergency plans and drills, warning and communication systems (including EU-Alert cell broadcast), community reporting mechanisms, and transparency and information sharing after incidents.

Response Framework

14. Tiered Response System

A tiered response system ensures the magnitude of response is proportional to incident severity:

Level	Scope	Characteristics and Resources
Level 1	Local incident	Minor release, limited impact; local fire and police; basic PPE and scene isolation
Level 2	Regional response	Significant release affecting area; specialised HAZMAT team; decontamination and medical triage
Level 3	National mobilization	Major incident, widespread impact; multiple HAZMAT teams; national coordination centre; public warning
Level 4	International	Catastrophic or cross-border; UCPM activation; multinational resources; joint incident command

15. Required Resources and Capabilities

For each level of response, core capabilities are required:

- Level 1 (Local): Basic hazmat gear, Emergency Response Guidebook, communication tools, mutual aid agreements between neighbouring municipalities.
- Level 2 (Regional): Specialised HAZMAT teams, mass decontamination equipment, chemical detectors, regional Emergency Operations Centre, evacuation resources.
- Level 3 (National): Central Crisis Management Centre, national reserve equipment, military/civil defence support, hospital mass-casualty readiness, international liaison.
- Level 4 (International): UCPM modules (AEOD teams, cleanup teams), neighbouring state resources, onsite coordination centre, translation support, cross-border medical evacuation protocols.

16. Cross-Border Cooperation Protocols

16.1 Notification and Information Sharing

If an incident might affect a neighbouring country, immediate notification is required. The national contact point calls the neighbor's 24/7 emergency contact. The Transport Community Secretariat should also be informed. Use of CECIS is recommended for UCPM communication.

16.2 Mutual Assistance and Joint Response

Bilateral agreements should allow emergency services to cross borders with minimal bureaucracy. Joint incident command structures should be instituted when both sides respond. Language interoperability and resource sharing arrangements are essential.

16.3 Regional and European Support Coordination

At Level 4, an On-Site Operations Coordination Centre (OSOCC) can be established. A common operating picture should be shared among all parties. The Transport Community Secretariat can facilitate expertise sharing from other Contracting Parties.

Implementation

17. Action Plans per Regional Partner

17.1 Summary of Priority Actions

Regional Partner	Priority Actions
Albania	1) Establish HAZMAT units in Tirana and Durrës; 2) Operationalize national training centre; 3) Formalize DG emergency protocols
Bosnia and Herzegovina	1) Implement unified 112 system; 2) Develop state-level DG response framework; 3) Finalize CBRN action plan with HAZMAT transport scenarios
Kosovo*	1) Procure basic HAZMAT PPE and detectors; 2) Train 30+ responders to Technician level; 3) Establish mutual aid agreements with neighbors
Montenegro	1) Develop civilian HAZMAT unit; 2) Complete tunnel classification and upgrades; 3) Establish national multi-agency training centre
North Macedonia	1) Address firefighter staffing shortfall (~340 recruits); 2) Continue fleet modernization with HAZMAT equipment; 3) Complete ADR translation into Macedonian
Serbia	1) Implement all Pirot lessons learned; 2) Establish civilian regional HAZMAT teams; 3) Complete full 112 implementation and formalize industry emergency network

17.2 Implementation Timeline and Milestones

- By end of 2026: Establish Regional Dangerous Goods Inspector Training Programme; begin tunnel classification reviews; initiate critical equipment procurement.
- By end of 2027: All partners should have functioning 112 systems; each should identify lead HAZMAT team; conduct regional cross-border exercise. Complete human resource gap filling; at least half of Regional Partners should have national DG protocols adopted; chemical industry network operational.
- By end of 2028: Full EU alignment; all acquis transposed; all institutions established; routine cross-border cooperation in place.

18. Governance and Monitoring

18.1 Institutional Framework

- Transport Community TDG Technical Committee: Strategic oversight of the Regional Framework; reviews progress on implementation; endorses updates and revisions; approves National Dangerous Goods Emergency Response Plans developed by Regional Partners.
- National Focal Points: Each Regional Partner designates a Dangerous Goods Emergency Response Focal Point responsible for domestic coordination, liaison with the Working Group, and preparation of the National Plan.

- Transport Community Permanent Secretariat: Technical assistance, workshop organisation, progress monitoring, coordination of the Working Group, and secretariat support for the development of National Plans.

18.2 Working Group on Dangerous Goods Emergency Response

A Working Group on Dangerous Goods Emergency Response shall be established under the TDG Technical Committee to guide the development of National Dangerous Goods Emergency Response Plans by each Regional Partner. The Working Group shall operate as a permanent expert body supporting the implementation of this Regional Framework.

Composition: The Working Group shall comprise representatives from each Regional Partner, including experts from civil protection authorities, transport ministries, 112/PSAP operators, fire and rescue services, and other relevant emergency response agencies. Observing Participants may participate upon request. The Transport Community Permanent Secretariat shall provide the Chair and secretariat support.

Mandate and Responsibilities:

- Develop a template and guidance document for National Dangerous Goods Emergency Response Plans, ensuring consistency with this Regional Framework while allowing for adaptation to national circumstances;
- Support each Regional Partner in drafting their National Plan, including through peer review and technical assistance;
- Develop standardised operational protocols, including 112 operator checklists for dangerous goods incidents, incident command procedures, and cross-border notification templates;
- Facilitate bilateral discussions on cross-border emergency communication protocols between neighbouring PSAPs/112 centres;
- Develop guidance on integration between National Plans and existing national emergency coordination systems (civil protection, crisis management, Seveso III external emergency plans);
- Coordinate the organisation of joint exercises and training activities;
- Share lessons learned from incidents and exercises across the region;
- Report to the TDG Technical Committee on progress in implementing the Regional Framework and developing National Plans.

Meeting Schedule: The Working Group shall meet at least twice annually, with additional meetings as required. Meetings may be held in person, virtually, or in hybrid format. The Working Group may establish sub-groups or task forces to address specific technical issues.

18.3 Timeline for National Plan Development

The development of National Dangerous Goods Emergency Response Plans shall follow this timeline:

- **Q2 2026:** Endorsement of Regional Framework by TDG Technical Committee; establishment of Working Group; designation of National Focal Points by each Regional Partner.
- **Q3 2026:** First Working Group meeting; adoption of National Plan template and guidance document; initiation of national consultations.

- **Q4 2026:** Working Group adopts standardised 112 operator checklists and cross-border notification templates; Regional Partners submit draft National Plan outlines for peer review.
- **Q1–Q2 2027:** Regional Partners complete draft National Plans; peer review and technical assistance provided through Working Group; bilateral discussions on cross-border PSAP protocols.
- **Q3 2027:** Final National Plans submitted to TDG Technical Committee for endorsement; first regional cross-border emergency response exercise.
- **Q4 2027:** All National Plans endorsed; cross-border PSAP communication protocols operational; Chemical Industry Emergency Support Network agreements signed.
- **2028:** Full implementation of National Plans; routine cross-border cooperation operational; external evaluation of Regional Framework implementation.

18.4 Monitoring and Reporting

- Annual Progress Reports: Each Regional Partner submits an annual progress report to the TDG Technical Committee on the implementation of their National Plan, including incident statistics, exercises conducted, and capability improvements.
- External Evaluation: In 2028, an external review shall be conducted to assess progress on Regional Framework implementation and suggest course corrections for the next implementation cycle.
- Framework Review Cycle: Comprehensive review of the Regional Framework every three years; ad hoc updates following major incidents or significant changes in EU acquis.

19. Resource Mobilization

- National Budgets: Dedicated funding for dangerous goods emergency preparedness.
- EU Pre-Accession Assistance (IPA): Key funding source for multi-country projects.
- Union Civil Protection Mechanism (UCPM): Training, expert exchange, co-financed exercises.
- Donor Programmes and IFIs: Integration with World Bank, UNDP, OSCE programmes.
- Private Sector Partnerships: Industry contributions in-kind or cash.
- Maintenance and Sustainability: Lifecycle cost planning for equipment.

Conclusion:

This Regional Framework establishes the common foundation upon which the Western Balkan partners will build their National Dangerous Goods Emergency Response Plans. Through the Working Group on Dangerous Goods Emergency Response, Regional Partners will work collaboratively to develop these National Plans while ensuring consistency with regional standards and cross-border interoperability. The Framework's success will be measured by the development and implementation of effective National Plans, the prevention of incidents, and the effectiveness of responses when incidents do occur. Through cooperation, shared knowledge, and mutual support under the Transport Community framework, the region can turn the lessons of past accidents into a safer future for all.

112 EMERGENCY NUMBER AND eCALL IMPLEMENTATION

Implementation Fiches

1. Background

Europe's single emergency number 112 and the eCall in-vehicle emergency system are critical life-saving services integrated into the EU acquis. The 112-emergency number, established by Council Decision 91/396/EEC, enables citizens to reach emergency services using a single, memorable number throughout Europe.

The Council Decision of 29 July 1991 on the introduction of a single European emergency call number, is repealed by:

- Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (Recast), amended by:
- Directive (EU) 2022/2555 of the European Parliament and of the Council of 14 December 2022 on measures for a high common level of cybersecurity across the Union, amending Regulation (EU) No 910/2014 and Directive (EU) 2018/1972, and repealing Directive (EU) 2016/1148 (NIS 2 Directive), and
- Corrigendum, published in the OJ L, 22.12.2023, p. 1, ((EU) 2022/2555).

The 112-number acquis comprises the industrial policy and internal market, sectoral operations for information technology, telecommunications and data-processing, general security provisions covering freedom area, security and justice.

For 112 effective measures throughout of the EU, the Commission adopted:

- Commission Delegated Regulation (EU) 2023/444 of 16 December 2022 supplementing Directive (EU) 2018/1972 of the European Parliament and of the Council with measures to ensure effective access to emergency services through emergency communications to the single European emergency number '112', and
- Corrigendum, OJ L 068, 6.3.2023, p. 182, ((EU) 2023/444).

Aiming to ensure the full functionality, compatibility, interoperability, continuity and conformity of the service throughout the EU, to reduce the costs of implementation for the EU, as a whole, the eCall priority action should be deployed, in accordance with the common specifications established in:

- Delegated Regulation (EU) No 305/2013 of 26 November 2012 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the harmonised provision for an interoperable EU-wide eCall, amended by:
- Commission Delegated Regulation (EU) 2024/1084 of 6 February 2024 amending Delegated Regulation (EU) No 305/2013 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the harmonised provision for an interoperable EU-wide eCall.

The eCall system, mandated by Decision No. 585/2014/EU, of the European Parliament and of the Council of 15 May 2014 on the deployment of the interoperable EU-wide eCall service, automatically dials 112 in the event of a serious road accident and transmits vehicle location and crash data to emergency responders. Together, these systems form a cornerstone of European road safety policy. For the eCall, the EU acquis is covering Transport policy, Inland transport, structural harmonization, technical and safety conditions, internal market, industrial policy, sectoral operations, information technology, telecommunications and data-processing.

The implementation of 112 and eCall has yielded significant benefits across the European Union. According to European Commission assessments, an EU-wide interoperable 112 system speeds up emergency response by 40% in urban areas and 50% in rural areas, with potential to reduce road fatalities by at least 4% and serious injuries by 6%.

The eCall system alone is estimated to save up to 2,500 lives annually across Europe when fully deployed. These life-saving benefits, combined with reduced congestion costs from faster incident response, represent a compelling case for investment.

The Regional Partners (Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia) are working to implement these systems as part of their EU integration commitments. The Transport Community Treaty, signed in 2017, incorporated the relevant EU legislation into Annex I, creating binding obligations for the Regional Partners. The EU-Western Balkans Summit declarations have consistently reaffirmed the importance of aligning with EU transport safety standards, including emergency communications infrastructure.

A Roadmap for 112 Emergency Number and eCall Implementation was developed by the Transport Community Permanent Secretariat. This Roadmap:

- Outlines the current implementation status across all Regional Partners
- Establishes clear targets aligned with the Next Generation Road Safety Action Plan 2026-2028
- Identifies the support provided by the Transport Community Secretariat and European Commission
- Sets transposition deadline of Q2 2026 and full implementation deadline of Q1 2028

The Roadmap identifies three key components for implementation:

1.1. Legislative Alignment: Transposition of Decision No. 585/2014/EU on the deployment of the interoperable EU-wide eCall service, Delegated Regulation (EU) No. 305/2013, amended by Commission Delegated Regulation (EU) 2024/1084 of 6 February 2024 amending Delegated Regulation (EU) No 305/2013 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the harmonised provision for an interoperable EU-wide eCall, on PSAP infrastructure specifications, and relevant provisions of the European Electronic Communications Code (EECC) concerning caller location and accessibility.

1.2. Infrastructure Deployment: Establishment or upgrade of Public Safety Answering Points (PSAPs) to handle 112 calls with Advanced Mobile Location (AML) and eCall Minimum Set of Data (MSD), including Computer-Aided Dispatch (CAD) systems, telecommunications infrastructure, and Geographic Information Systems (GIS).

1.3. Operational Capacity: Training of 112 operators, establishment of inter-agency coordination mechanisms, public awareness campaigns, and gradual phase-out of legacy emergency numbers in favour of the unified 112 service.

Currently, each partner is at a different stage of implementation. North Macedonia stands as a leading example in the region with a technically advanced NG112 system in place since 2022. Montenegro operates a fully functional 112 system with three regional OCC112 centres (Podgorica, Bijelo Polje, Bar) providing 24/7 nationwide coverage, with operational eCall and AML capabilities since 2021. Kosovo has had 112 operational since 2002 but needs modernization for AML and eCall. Albania has 112 limited to Tirana and Durrës only, for the emergency calls are addressed. Serbia launched partial 112 operations in 2024 with three regional centres equipped (Belgrade, Novi Sad, Kragujevac) and Niš in progress; a Draft Law on the National 112 Emergency Call System has been prepared. Bosnia and Herzegovina remains without any 112 system, with a feasibility study currently underway.

2. Implementation Fiches - Scope and Methodology

The Roadmap identifies activities required for full implementation of 112 and eCall, including preparing Regional Partner-specific implementation fiches. These fiches aim to aid decision-makers and investors in preparation for considering interventions and projects related to 112/eCall infrastructure and technical assistance, and to serve for further project preparation and bilateral discussions with each Regional Partner government.

Implementation fiches have been prepared for all Regional Partners:

- Albania
- Bosnia and Herzegovina
- Kosovo
- Montenegro
- North Macedonia
- Serbia

To identify and present the priorities for improvements, the Transport Community Permanent Secretariat engaged in extensive consultations with stakeholders. In preparing the fiches, the following inputs were taken into account:

- Progress Reports on Transport of Dangerous Goods prepared by the TCT Secretariat, which include 112/eCall implementation status for each Regional Partner
- European Commission Reports on the implementation of the European emergency number 112 (annual reports 2019- 2025)
- EENA (European Emergency Number Association) PSAP reports and AML implementation assessments
- Technical documentation from North Macedonia's EU-funded 112/NG112 project implementation
- EIB project documentation for Ukraine's 112 system (EUR 52 million, 2024)
- Project "Support for Development of Civil Protection System" MOD/NACP, Social protection € 30,000,000, Matured status, priority "A", SDG 16.1, COFOG 03.5" Albania.
- Project "Establishing of a high-performance computing data processing centre and a high-level security information exchange network to enable regional interoperability in the Western Balkans region", NAIS, Digital/Broadband, Indicative AMT € 15,000,000, Partially matured status, Priority "B", Sustainable at SDG 17.6, COFOG 04.6, Albania. Project "Support for Road Sector Reform and Road Safety Strategy", Project Value 2,200,000.00 €, Ministry of Infrastructure and Energy, ARA, DGRTS, National Centre for Emergency services (QKUM); and ASP Road Police, (04.2024 - 04.2027), Albania.

Consultations and correspondence with stakeholders:

- Questionnaire distributed to all Regional Partner Ministries of Interior/Civil Protection agencies, Q3 2025
- Regional Steering Committee meetings, 2025, Belgrade and Brussels
- Technical Committee on Road Safety/ITS meetings, 2025
- Email consultation and correspondence with Regional Partner focal points and European Commission

The following elements are included in all six regional partners fiches:

- Current status assessment covering 112 coverage, eCall capability, AML implementation, legislative framework, lead institution, and existing PSAP infrastructure
- Main issues and challenges presented in narrative form describing technical, institutional, and operational gaps
- Investment needs in infrastructure to establish or upgrade PSAP facilities, including telecommunications equipment, CAD software, GIS systems, and backup facilities
- Investment in new equipment and IT/ICT systems including AML endpoints, eCall modems, caller location displays, and system integration
- Investments in human resources, training, and inter-agency coordination including operator recruitment, multilingual training, joint exercises, and coordination mechanisms
- Timeline for implementation aligned with TCT targets (Q2 2026 transposition, Q1 2028 full implementation)
- Estimated costs broken down by Works & Supply and Technical Assistance, across short-term (2026-2027), medium-term (2028), and long-term (beyond 2028) phases

The overall investments are estimated at approximately EUR 44.5 million, of which EUR 5.3 million is allocated for Technical Assistance services. The total budget breakdown is presented in the Regional Investment Summary section of this document.

2.1 Methodology for Cost Estimation

Intervention needs are based on available data from recent implementations, EU benchmark studies, and consultations with stakeholders. The following methodology for cost estimation has been applied:

- For PSAP infrastructure and facilities: Costs are estimated based on the EU benchmark of approximately EUR 50,000 per PSAP for eCall upgrade (EC Communication COM(2005)431), adjusted for regional market prices and scope of implementation. Full greenfield PSAP construction costs are extrapolated from North Macedonia's implementation (8 centres, 78 workstations) and Ukraine's EUR 52 million nationwide project (4 major cities).
- For equipment and IT/ICT systems: Costs are calculated per unit based on recent market prices for CAD software licenses, AML endpoint solutions, eCall modem units, GIS software, and telecommunications equipment. Reference is made to procurement data from recent TAIEX and IPA-funded projects in the region.
- For AML implementation: Estimates are based on ETSI specifications noting that AML requires minimum investment on the PSAP side, with primary costs in system integration and operator training. Mobile network operator costs are excluded as these are typically borne by operators under regulatory obligations.
- For training and capacity building: Estimates are informed by recent experiences with TAIEX workshops, EU Twinning projects, and bilateral training programmes in the region. Costs include operator training, multilingual capability development, joint exercises, and ongoing professional development.
- For technical assistance and design services: Costs are calculated as a percentage of total investment cost (typically 8-12%) based on similar experiences in Western Balkans IPA projects, covering feasibility studies, technical specifications, procurement support, and implementation supervision.

2.2. Key EU Legal Framework

The following EU legal instruments form the basis for 112/eCall obligations incorporated into the Transport Community Treaty:

Decision No. 585/2014/EU of the European Parliament and of the Council on the deployment of the interoperable EU-wide eCall service. This Decision requires Member States to deploy the necessary eCall PSAP infrastructure required for the proper receipt and handling of all eCalls on their territory. It establishes requirements for PSAP operators to receive and process the Minimum Set of Data (MSD) transmitted automatically from vehicles involved in accidents.

Commission Delegated Regulation (EU) No. 305/2013 supplementing Directive 2010/40/EU with regard to the harmonised provision for an interoperable EU-wide eCall. This Regulation establishes the detailed technical specifications for PSAP infrastructure upgrade for eCall, including requirements for receiving and processing the Minimum Set of Data, voice channel establishment, and callback functionality.

Directive (EU) 2018/1972 - European Electronic Communications Code (EECC) Article 109 mandates that caller location information, both network-based and handset-derived (Advanced Mobile Location), be made available to the most appropriate PSAP without delay. It also requires equivalent access to emergency services for persons with disabilities, including through real-time text and other accessible formats.

Commission Delegated Regulation (EU) 2019/320 supplementing the Radio Equipment Directive requires that all smartphones sold in the EU Single Market support Advanced Mobile Location (AML), ensuring handset-derived caller location is transmitted during emergency calls. This entered into force in March 2022.

3. Albania - 112/eCall Implementation Fiche

3.1. Current Status

Indicator	Status
112 Coverage	Partial (Tirana only)
eCall Capability	No
AML Implementation	No
Legislative Framework	Law 45/2019 in place; CoM decision pending
Lead Institution	National Agency for Civil Protection / State Police
Population	2.8 million
Territory	28,748 km ²
PSAP Infrastructure	1 operational (Tirana), expansion needed
Legacy Numbers	126 (Police), 127 (Ambulance), 128 (Fire), 129 (Police)

3.2. Main Issues and Challenges

Albania faces significant challenges in expanding its 112-emergency number service beyond the capital Tirana, where it has been operational since 2016. The primary issue is the limited geographic coverage, with only 1 of 61 municipalities currently served by the unified emergency number. Citizens outside Tirana must still use legacy numbers (126, 127, 128, 129) which creates a two-tier service and poses risks for tourists unfamiliar with local numbers.

The institutional framework presents coordination challenges, with dual oversight between the National Agency for Civil Protection (policy mandate) and the State Police (operational control). There is no integrated Computer-Aided Dispatch (CAD) system or unified database linking emergency services across the country. Advanced Mobile Location (AML) is not implemented, meaning emergency responders cannot automatically receive precise GPS coordinates from callers. The PSAP infrastructure does not support eCall data reception from vehicles, and the pending Council of Ministers decision on 112 operations under Law 45/2019 has not yet been approved.

Unique emergency 112 connects directly to the police, fire department and ambulance service, uniting all emergency services into a single number, for quick and effective calls, for Albania.

3.3. Proposed Improvement Measures

Short-term Measures (2026-2027)	Medium-term Measures (2028)	Long-term Measures (Beyond 2028)
<p>Approve the pending Council of Ministers decision detailing 112 operations under Law 45/2019, formally establishing cooperation mechanisms between the National Agency for Civil Protection and the State Police.</p> <p>Establish a joint 112 Management Committee with representatives from the Ministry of Interior, Ministry of Defence (Civil Protection), and Ministry of Health to oversee the expansion programme.</p> <p>Allocate dedicated budget for 2026-2027 expansion, including communications equipment, software licenses, and operator recruitment.</p> <p>Begin procurement process for establishing 3-4 regional 112 centres in major cities (Durrës, Shkodra, Vlorë, Korçë) as Phase I of nationwide rollout.</p> <p>Initiate technical discussions with mobile network operators on AML implementation requirements and timeline.</p>	<p>Complete establishment of regional 112 centres in major cities, achieving coverage for approximately 60% of the population by end of 2028.</p> <p>Implement Advanced Mobile Location (AML) across all mobile networks, enabling automatic GPS coordinate transmission for 112 calls from smartphones.</p> <p>Deploy an integrated Computer-Aided Dispatch (CAD) system linking Tirana with all regional centres on a common platform.</p> <p>Transpose Decision 585/2014/EU and Delegated Regulation 305/2013 into national law, establishing the legal framework for eCall.</p> <p>Begin procurement of eCall modem units and software for PSAP upgrade, with operator training on eCall data interpretation.</p>	<p>Complete nationwide 112 coverage across all 61 municipalities, ensuring 24/7 PSAP availability throughout Albanian territory.</p> <p>Achieve full eCall operational capability, enabling automatic crash data reception and processing from EU-equipped vehicles.</p> <p>Implement Next Generation 112 (NG112) readiness assessment and begin planning for IP-based emergency communications.</p> <p>Execute legacy number phase-out strategy, with automatic forwarding of calls to 126/127/128/129 to the 112 system.</p> <p>Establish a regional backup centre for disaster resilience, ensuring system continuity during major emergencies.</p>

3.4. Human Resources and Intra-Agency Coordination

Staffing, Training, and Coordination Measures

Recruit and train 80-100 new 112 operators to staff the expanded regional centres, with emphasis on multilingual capabilities (Albanian, English, Greek, Italian for tourist areas).

Develop a standardised training curriculum in partnership with EU Member States through TAIEX and Twinning programmes, building on existing cooperation with Finland and Sweden.

Conduct regular joint exercises involving police, fire, and ambulance services to ensure seamless coordination through the 112 dispatch system.

Establish a 112 Training Academy within NACP to provide ongoing professional development and certification for operators.

Implement quality assurance programmes including call monitoring, performance metrics, and feedback mechanisms.

3.5. Timeline for Implementation

2026-2027	2028	Beyond 2028
Legislative alignment, initial infrastructure deployment, institutional coordination, AML initiation	Full 112 coverage, AML fully operational, eCall deployment and testing, staff training completion	NG112 readiness, legacy number phase-out, advanced features, regional coordination

3.6. Total Estimated Costs (EUR)

Category	2026-2027	2028	Beyond 2028
Works & Supply	2,800,000	4,500,000	3,200,000
Technical Assistance	350,000	450,000	300,000
TOTAL	EUR 11,600,000		

4. Bosnia and Herzegovina - 112/eCall Implementation Fiche

4.1. Current Status

Indicator	Status
112 Coverage	Not implemented
eCall Capability	No
AML Implementation	No
Legislative Framework	No state-level law; feasibility study ongoing (2024-2025)
Lead Institution	Ministry of Security (state); Entity Ministries of Interior
Population	3.3 million
Territory	51,197 km ²
PSAP Infrastructure	None for 112; separate entity systems exist
Legacy Numbers	122 (Police), 123 (Fire), 124 (Ambulance)

4.2. Main Issues and Challenges

Bosnia and Herzegovina remains the only Western Balkan partner without an operational 112 emergency number system. The complex governance structure, with State-level, Entity-level (Federation of Bosnia and Herzegovina and Republika Srpska), and Cantonal-level jurisdictions, presents the most significant barrier to implementation. Emergency services are currently organised at the Entity level, with separate numbers (122 for police, 123 for fire, 124 for ambulance) operating independently.

There is no state-level law establishing 112 as the unified emergency number, and existing civil protection legislation maintains the fragmented approach. The lack of inter-entity coordination mechanisms, incompatible emergency dispatch systems across jurisdictions, and potential political resistance to centralization further complicate implementation. An EU-funded feasibility study launched in 2024 is currently assessing technical, financial, and organizational requirements, representing the first concrete step toward establishing the 112 system. Without central PSAP infrastructure, no integrated CAD system, and no caller location capabilities, Bosnia and Herzegovina must essentially build the entire 112/eCall system from scratch.

4.3. Proposed Improvement Measures

Short-term Measures (2026-2027)	Medium-term Measures (2028)	Long-term Measures (Beyond 2028)
<p>Complete the EU-funded feasibility study by mid-2026 and secure high-level political agreement on the implementation model (centralized vs. entity-based 112 centres).</p> <p>Establish a formal 112 Implementation Working Group with representatives from the Ministry of Security, Federation and Republika Srpska governments, Brčko District, and all relevant emergency services.</p> <p>Draft framework legislation on 112 emergency services at the state level, or coordinate harmonised amendments to Entity laws that recognise 112 as the primary emergency number.</p> <p>Engage telecom regulators to draft rules for 112 call routing and caller location transmission, aligning with EU telecommunications directives.</p> <p>Develop detailed implementation plan and budget estimates for submission to IPA III funding or other donor mechanisms.</p>	<p>Adopt the 112 framework law at state level or secure inter-entity agreement that mandates 112 as the single emergency number with defined roles and funding mechanisms.</p> <p>Secure IPA/donor funding and launch procurement for 112 PSAP infrastructure, including call centre equipment, ICT systems, and network connectivity.</p> <p>Establish 2-3 regional 112 centres (likely in Sarajevo, Banja Luka, and possibly Mostar) with interconnected systems enabling cross-entity coordination.</p> <p>Implement AML capability in coordination with mobile network operators, ensuring precise caller location is available to all PSAPs.</p> <p>Recruit and train the first cohort of 112 operators and dispatchers, with standardised procedures across all Entity jurisdictions.</p>	<p>Achieve full 112 coverage across all jurisdictions in Bosnia and Herzegovina, with operational PSAPs serving the entire population 24/7.</p> <p>Deploy eCall PSAP capability enabling automatic crash data reception from EU-equipped vehicles throughout territory.</p> <p>Establish formal inter-entity interoperability protocols ensuring seamless handling of emergencies that cross Entity boundaries.</p> <p>Develop and implement legacy number phase-out strategy, gradually transitioning 122/123/124 to automatic forwarding to 112.</p> <p>Conclude cross-border coordination agreements with Croatia, Serbia, and Montenegro for mutual assistance in border region emergencies.</p>

4.4. Human Resources and Intra-Agency Coordination

Staffing, Training, and Coordination Measures
<p>Establish an Inter-Entity 112 Steering Committee with decision-making authority over operational matters, staffing, and resource allocation across all jurisdictions.</p> <p>Recruit 150-200 operators across all planned centres, with representation from all communities and language capabilities (Bosnian, Croatian, Serbian, English).</p> <p>Develop joint training programmes bringing together personnel from police, fire, and ambulance services from both Entities to build inter-agency trust and coordination.</p>

Create standardised operating procedures (SOPs) applicable across all jurisdictions, ensuring consistent service quality regardless of where calls originate.

Institute regular coordination meetings at both technical (operator) and strategic (management) levels to address operational issues and continuous improvement.

4.5. Timeline for Implementation

2026-2027	2028	Beyond 2028
Legislative alignment, initial infrastructure deployment, institutional coordination, AML initiation	Full 112 coverage, AML fully operational, eCall deployment and testing, staff training completion	NG112 readiness, legacy number phase-out, advanced features, regional coordination

4.6. Total Estimated Costs (EUR)

Category	2026-2027	2028	Beyond 2028
Works & Supply	1,500,000	8,500,000	5,000,000
Technical Assistance	500,000	850,000	500,000
TOTAL	EUR 16,850,000		

5. Kosovo - 112/eCall Implementation Fiche

5.1. Current Status

Indicator	Status
112 Coverage	Yes - nationwide since 2002
eCall Capability	No
AML Implementation	No
Legislative Framework	In place (Law on Protection and Rescue)
Lead Institution	Emergency Management Agency (MoIA)
Population	1.8 million
Territory	10,887 km ²
PSAP Infrastructure	1 national centre (Pristina) with regional liaison
Legacy Numbers	192 (Police), 193 (Fire), 194 (Ambulance)

5.2. Main Issues and Challenges

Kosovo has the distinction of being the earliest adopter of 112 in the Western Balkans, with the system operational since 2002 under the Emergency Management Agency. However, the system now requires significant modernization to meet current EU standards and technological capabilities. While 112 is accessible nationwide, the infrastructure has not been upgraded to include Advanced Mobile Location (AML), meaning operators must rely on callers to describe their location or use basic cell tower triangulation.

The PSAP infrastructure cannot process eCall data from vehicles, so any automatic crash calls are handled as voice-only without the critical vehicle location and crash severity information. Legacy emergency numbers (192, 193, 194) continue to operate in parallel, creating potential confusion and fragmenting emergency response resources. The system also faces challenges with high volumes of non-emergency and prank calls, limited backup capacity, and the need for continuous bilingual (Albanian and Serbian) service provision. Despite these gaps, Kosovo's long experience with 112 provides a solid operational foundation for the upgrade path ahead.

5.3. Proposed Improvement Measures

Short-term Measures (2026-2027)	Medium-term Measures (2028)	Long-term Measures (Beyond 2028)
<p>Conduct a comprehensive technical assessment of current 112 infrastructure to identify specific upgrade requirements for AML and eCall capability.</p> <p>Initiate formal engagement with telecom operators (IPKO, Vala) on AML implementation, including technical specifications and testing protocols.</p> <p>Upgrade the Computer-Aided Dispatch (CAD) system software to support AML data ingestion and display on operator screens.</p> <p>Implement enhanced call recording and quality monitoring systems to improve service quality and support operator training.</p> <p>Launch a public awareness campaign emphasizing proper 112 use, including penalties for misuse, to reduce non-emergency call volumes.</p>	<p>Complete AML implementation across all mobile networks, achieving automatic smartphone location delivery for 112 calls.</p> <p>Procure and install eCall modem and software solution at the 112 centre, enabling Minimum Set of Data (MSD) reception from vehicles.</p> <p>Establish a backup dispatch facility in a secondary city (Prizren or Peja) to handle overflow and ensure continuity during emergencies.</p> <p>Implement text-to-112 capability for hearing and speech-impaired callers, ensuring accessible emergency services for all citizens.</p> <p>Integrate digital GIS mapping system enabling operators to visualize incident locations and coordinate multi-agency responses.</p>	<p>Achieve full eCall operational capability with trained operators able to interpret vehicle crash data and coordinate appropriate responses.</p> <p>Implement Next Generation 112 (NG112) architecture enabling IP-based communications, video calls, and enhanced data sharing.</p> <p>Execute legacy number consolidation, technically routing 192/193/194 through the 112 centre while phasing out separate advertising.</p> <p>Deploy advanced analytics and reporting system to monitor performance, identify trends, and support evidence-based resource allocation.</p> <p>Establish formal regional coordination protocols with neighbouring PSAPs for cross-border emergency assistance.</p>

5.4. Human Resources and Intra-Agency Coordination

Staffing, Training, and Coordination Measures
<p>Train all current operators on AML and eCall procedures, including interpreting location confidence levels and vehicle crash data.</p> <p>Maintain and strengthen bilingual capability (Albanian, Serbian) with English proficiency for KFOR/EULEX and tourist calls.</p> <p>Conduct regular multi-agency coordination exercises involving EMA, Police, Fire, and Emergency Medical Services.</p> <p>Implement quality assurance programme with call monitoring, performance metrics, and structured feedback for continuous improvement.</p> <p>Develop career pathway for 112 operators including advancement opportunities, specialised training, and competitive compensation.</p>

5.5. Timeline for Implementation

2026-2027	2028	Beyond 2028
Legislative alignment, initial infrastructure deployment, institutional coordination, AML initiation	Full 112 coverage, AML fully operational, eCall deployment and testing, staff training completion	NG112 readiness, legacy number phase-out, advanced features, regional coordination

5.6. Total Estimated Costs (EUR)

Category	2026-2027	2028	Beyond 2028
Works & Supply	800,000	1,500,000	1,200,000
Technical Assistance	150,000	200,000	150,000
TOTAL	EUR 4,000,000		

6. Montenegro - 112/eCall Implementation Fiche

6.1. Current Status

Indicator	Status
112 Coverage	Yes - nationwide 24/7 (3 regional OCC112: Podgorica, Bijelo Polje, Bar)
eCall Capability	Yes (operational since 2021; NG eCall pending)
AML Implementation	Yes (via SMS/SMPP since 2021; HTTPS pending)
Legislative Framework	In place (Law on Protection and Rescue)
Lead Institution	Directorate for Protection and Rescue (Mol) – Department OCC112
Population	620,000
Territory	13,812 km ²
PSAP Infrastructure	3 regional OCC112 centres
Legacy Numbers	122 (Police), 123 (Fire), 124 (Ambulance)

6.2. Main Issues and Challenges

The 112 emergency number in Montenegro is operational 24 hours a day, 7 days a week through three regional OCC112 in Podgorica, Bijelo Polje and Bar municipality. The centres operate in a shift-based system ensuring continuous availability of the 112 service. The eCall service is operational in Montenegro. The Minimum Set of Data (MSD) transmitted from vehicles is received by OCC112 and displayed within the operational system, including visualization of the incident location on the GIS platform. Next Generation eCall (IP-based eCall) has not yet been implemented. Advanced Mobile Location (AML) is operational in Montenegro. AML data is delivered via SMS messages through secured links provided by mobile network operators and processed by the OCC112 system. AML delivery via HTTPS endpoints has not yet been implemented.

However, staffing levels are limited, which may affect operational capacity during peak periods, particularly during the tourist season. According to the current official staffing plan (systematization of posts), Department 112 foresees a total of 42 positions, of which 21 are currently filled. The OCC112 Section has 31 positions foreseen with 14 currently filled (17 vacant). The Telecommunications and Information Systems 112 Section has 5 positions foreseen with only 1 currently filled (4 vacant). Overall, the main staffing gaps are in the OCC112 operational section and in the telecommunications and information systems section, which are critical for maintaining and further developing the technical and operational capabilities of the 112 system. Montenegro experiences significant seasonal population growth, particularly in coastal regions, where the number of people can increase several times

compared to the resident population, resulting in higher call volumes to 112 and increased demand for multilingual communication. Regarding integration, OCC112 centres perform coordination and call handling functions, while police, fire brigades and emergency medical services operate their own dispatch systems. Emergency calls are forwarded and coordinated through established operational procedures. Further integration through shared digital dispatch platforms and data exchange interfaces could enhance operational efficiency. The system of three regional OCC112 centres was designed to ensure geographic coverage of the territory, operational redundancy, and continuity of service in case of major emergencies or technical failures

6.3. Proposed Improvement Measures

Short-term Measures (2026-2027)	Medium-term Measures (2028)	Long-term Measures (Beyond 2028)
<p>Address staffing gaps by filling 17 vacant positions in the OCC112 Section and 4 vacant positions in the Telecommunications and IT Section to strengthen operational capacity and system development capabilities.</p> <p>Complete budget allocation and hiring process to fill the 21 vacant positions, with priority given to recruiting operators with multilingual capabilities for tourist season surge capacity.</p> <p>Initiate implementation of AML delivery via HTTPS endpoints to complement the existing SMS/SMPP-based AML system, aligning with standard EU architecture.</p> <p>Begin planning for Next Generation eCall (NG eCall / IP-based eCall) implementation to complement the existing circuit-switched eCall architecture.</p> <p>Develop and deliver specialised training for all operators on eCall data interpretation and response coordination.</p>	<p>Implement equipment upgrades for local emergency responders (fire brigades, medical centres) enabling direct data connection with 112 centres.</p> <p>Deploy advanced GIS and digital mapping systems integrated with the CAD platform for improved incident visualization and resource dispatch.</p> <p>Establish formal cross-border emergency coordination protocols with Croatia, Albania, Serbia, and Kosovo for border region incidents.</p> <p>Launch comprehensive public awareness campaigns with emphasis on tourist areas, including multilingual materials in English, German, Russian.</p> <p>Implement text-to-112 accessibility features ensuring equal access for hearing and speech-impaired persons.</p>	<p>Initiate Next Generation 112 (NG112) implementation planning, including assessment of IP-based communication infrastructure requirements.</p> <p>Conduct assessment of system consolidation options (whether three centres should be maintained or consolidated for efficiency).</p> <p>Execute legacy number phase-out, beginning with unified messaging that 112 is the primary number for all emergencies.</p> <p>Position Montenegro as a regional best-practice leader, hosting workshops and providing advisory support to neighbouring countries.</p> <p>Implement comprehensive cybersecurity measures protecting 112 infrastructure as critical national assets.</p>

6.4. Human Resources and Intra-Agency Coordination

Staffing, Training, and Coordination Measures

Fill 21 vacant positions across Department 112, prioritizing the 17 vacant OCC112 Section positions and 4 vacant Telecommunications and IT positions to strengthen operational capacity.

Provide multilingual training (Montenegrin, English, Albanian) with emphasis on handling tourist emergencies during peak season.

Establish joint exercise programme with Croatian, Albanian, and Serbian counterparts for cross-border emergency scenarios.

Develop knowledge-sharing programme where Montenegrin experts advise regional partners on 112 implementation and operations.

Implement stress management and psychological support services for operators dealing with traumatic emergency calls.

6.5. Timeline for Implementation

2026-2027	2028	Beyond 2028
Staffing expansion, AML HTTPS upgrade, NG eCall planning, inter-agency integration	Full staffing achieved, NG eCall operational, AML HTTPS deployed, responder integration complete	NG112 readiness, legacy number phase-out, advanced features, regional coordination

6.6. Total Estimated Costs (EUR)

Category	2026-2027	2028	Beyond 2028
Works & Supply	300,000	600,000	400,000
Technical Assistance	50,000	100,000	50,000
TOTAL	EUR 1,500,000		

7. North Macedonia - 112/eCall Implementation Fiche

7.1. Current Status

Indicator	Status
112 Coverage	Yes - nationwide (8 centres, 78 workstations)
eCall Capability	Yes
AML Implementation	Yes
Legislative Framework	In place (Law on Crisis Management, amended 2021)
Lead Institution	Crisis Management Centre (CMC)
Population	2.1 million
Territory	25,713 km ²
PSAP Infrastructure	1 national + 7 regional centres (Skopje, Tetovo, Bitola, Shtip, Ohrid, Strumica, Veles, Kumanovo)
Legacy Numbers	192 (Police), 193 (Fire), 194 (Ambulance)

7.2. Main Issues and Challenges

North Macedonia stands as the best-practice example in the Western Balkans, having implemented a state-of-the-art 112 system through an EU-funded project completed in 2022. The system features 78 workstations across 8 centres running the Life 1st Computer-Aided Dispatch platform from Beta 80 Group, with full AML and eCall capabilities. Notably, North Macedonia is among the first Western Balkan partners to initiate the transition toward a Next Generation 112 (NG112) system, with substantial progress made in IP-based PSAP modernization and GIS integration.

With the implementation phase complete, the primary challenges now shift to sustainability and continuous improvement. Long-term maintenance planning, software licensing, and eventual hardware refresh cycles require dedicated budget allocation. Staff retention and career development for specially trained 112 operators presents ongoing management challenges, particularly given the specialised pay grade established for these positions. Legacy numbers (192, 193, 194) continue in parallel use, requiring eventual consolidation strategy. The system handles over 2,000 calls daily with 94.57% answered within 15 seconds, demonstrating excellent performance that must be sustained. Regional expansion to southeast and southwest areas is planned to complete coverage optimization.

7.3. Proposed Improvement Measures

Short-term Measures (2026-2027)	Medium-term Measures (2028)	Long-term Measures (Beyond 2028)
<p>Conduct comprehensive system performance evaluation documenting call volumes, response times, and coordination effectiveness as baseline for continuous improvement.</p> <p>Establish long-term maintenance contracts with technology providers ensuring software updates, hardware support, and system availability guarantees.</p> <p>Begin public messaging transition reducing prominence of legacy numbers (192/193/194) in favour of unified 112 promotion.</p> <p>Complete the planned regional centre expansion in southeast and southwest areas, adding coverage optimization for underserved regions.</p> <p>Document operational best practices and develop knowledge transfer materials for regional partners.</p>	<p>Implement advanced NG112 features including emergency video call capability for situations requiring visual assessment.</p> <p>Achieve full integration of digital dispatch to field units, equipping emergency vehicles with mobile data terminals connected to the CAD system.</p> <p>Develop and launch official emergency mobile application enabling additional communication channels with the 112 centre.</p> <p>Systematically reduce legacy number visibility in all public materials, signage, and official communications.</p> <p>Establish formal system for sharing best practices with regional partners through hosted workshops and expert exchanges.</p>	<p>Complete full NG112 implementation including all advanced features (real-time text, video, multimedia messaging).</p> <p>Execute legacy number retirement or full redirection, achieving single-number emergency access throughout North Macedonia.</p> <p>Pilot AI-assisted call triage and priority classification to enhance operator efficiency and response accuracy.</p> <p>Position CMC as the regional training and excellence hub for 112/eCall implementation in the Western Balkans.</p> <p>Establish continuous innovation programme monitoring emerging technologies and EU standards for proactive adoption.</p>

7.4. Human Resources and Intra-Agency Coordination

Staffing, Training, and Coordination Measures
<p>Implement operator retention and motivation programmes including competitive compensation, career advancement, and recognition systems.</p> <p>Provide advanced training on NG112 features, emerging technologies, and evolving EU standards for emergency communications.</p> <p>Establish formal knowledge-sharing programme with regional partners, hosting training sessions and expert secondments.</p> <p>Develop structured career pathway with clear promotion criteria, specialised roles, and leadership development opportunities.</p>

Institute regular performance reviews with constructive feedback and individual development planning for all operators.

7.5. Timeline for Implementation

2026-2027	2028	Beyond 2028
Legislative alignment, initial infrastructure deployment, institutional coordination, AML initiation	Full 112 coverage, AML fully operational, eCall deployment and testing, staff training completion	NG112 readiness, legacy number phase-out, advanced features, regional coordination

7.6. Total Estimated Costs (EUR)

Category	2026-2027	2028	Beyond 2028
Works & Supply	400,000	800,000	600,000
Technical Assistance	100,000	150,000	100,000
TOTAL	EUR 2,150,000		

8. Serbia - 112/eCall Implementation Fiche

8.1. Current Status

Indicator	Status
112 Coverage	Partial (operational since July 2024)
eCall Capability	Partial
AML Implementation	No
Legislative Framework	Draft Law on National 112 Emergency Call System prepared; adoption pending
Lead Institution	Ministry of Interior
Population	6.7 million
Territory	88,361 km ²
PSAP Infrastructure	4 regional centres (Belgrade, Novi Sad, Kragujevac equipped; Niš in progress)
Legacy Numbers	192 (Police), 193 (Fire), 194 (Ambulance)

8.2. Main Issues and Challenges

Serbia's 112 system became partially operational in July 2024, following a complex implementation path. The system was largely equipped through a substantial Chinese donation (EUR 25.6 million), which provided hardware and infrastructure. Within the framework of the implementation of the Agreement between the Republic of Serbia and the People's Republic of China, changes are being made to the CAD application developed by Chinese partners, which manages the entire 112 system, based on the information requirements of the Serbian side. A Draft Law on the National 112 Emergency Call System has been prepared, with proposals, suggestions and comments from institutions currently being collected, after which the procedure for adopting the Law will begin. The proposal for changes to the organizational structure of the Ministry of Interior is currently being coordinated in accordance with the defined conceptual model of the 112 System.

The regional centres in Belgrade, Novi Sad and Kragujevac are equipped with all the equipment required for the 112 System. The equipping of the Regional Centre in Niš is currently in progress. Advanced Mobile Location (AML) has not been implemented, reducing location accuracy for mobile callers. Integration with existing emergency services (police 192, fire 193, ambulance 194) is ongoing, with coordination protocols needing refinement. As Serbia's largest Western Balkan economy by population, the scale of the implementation challenge is substantial, requiring coverage across 174 municipalities and significant operator recruitment

8.3. Proposed Improvement Measures

Short-term Measures (2026-2027)	Medium-term Measures (2028)	Long-term Measures (Beyond 2028)
<p>Continue coordination with Chinese partners on CAD application modifications to meet Serbian operational requirements, ensuring alignment with EU standards (Decision 585/2014/EU, Reg.305/2013) and interoperability with the European eCall ecosystem.</p> <p>Complete the equipping of the Regional Centre in Niš, building on the fully equipped centres in Belgrade, Novi Sad and Kragujevac, to achieve expanded regional dispatch capability.</p> <p>Initiate formal AML implementation programme with Serbian mobile operators, aligned with EU Electronic Communications Code requirements.</p> <p>Complete the adoption procedure for the Draft Law on the National 112 Emergency Call System, collecting institutional feedback and formally designating 112 as the primary emergency number with defined institutional responsibilities.</p> <p>Complete the coordination of organizational structure changes within the Ministry of Interior in accordance with the defined conceptual model of the 112 System, establishing clear inter-agency coordination mechanisms bringing together police, fire, ambulance, and civil protection under unified 112 oversight.</p>	<p>Achieve full nationwide 112 coverage across all 174 municipalities with 24/7 operational capability.</p> <p>Complete AML implementation ensuring precise smartphone location is automatically delivered for all 112 calls.</p> <p>Verify and optimize eCall capability, ensuring full compliance with EU technical specifications for vehicle crash data reception.</p> <p>Deploy integrated CAD system linking central and regional 112 centres with all emergency service dispatch units.</p> <p>Complete comprehensive staff training programme covering all operators and dispatchers on unified procedures.</p>	<p>Conduct NG112 readiness assessment and begin planning for next-generation IP-based emergency communications infrastructure.</p> <p>Implement legacy number consolidation, routing 192/193/194 through unified 112 dispatch with eventual phase-out strategy.</p> <p>Establish system interoperability with EU neighbors (Hungary, Croatia, Bulgaria, Romania) for cross-border emergency coordination.</p> <p>Deploy advanced features including text-to-112 accessibility, video call capability, and enhanced data sharing.</p> <p>Implement geographic redundancy with backup centre capability for disaster resilience.</p>

8.4. Human Resources and Intra-Agency Coordination

Staffing, Training, and Coordination Measures

Recruit 200-250 operators required for full nationwide 24/7 coverage, with competitive compensation and professional development opportunities.

Develop standardised training curriculum aligned with EU best practices and certified through recognised professional frameworks.

Establish multi-agency coordination protocols through regular joint exercises and integrated training programmes.

Provide language training in Serbian, Hungarian, and Albanian to serve minority communities in their native languages.

Implement joint exercise programmes with neighbouring countries (Hungary, Croatia, North Macedonia) for cross-border scenarios.

8.5. Timeline for Implementation

2026-2027	2028	Beyond 2028
Legislative alignment, initial infrastructure deployment, institutional coordination, AML initiation	Full 112 coverage, AML fully operational, eCall deployment and testing, staff training completion	NG112 readiness, legacy number phase-out, advanced features, regional coordination

8.6. Total Estimated Costs (EUR)

Category	2026-2027	2028	Beyond 2028
Works & Supply	2,000,000	3,000,000	2,000,000
Technical Assistance	400,000	500,000	350,000
TOTAL	EUR 8,250,000		

9. Regional Investment Summary

The overall investments for 112/eCall implementation across the Western Balkans are estimated at approximately EUR 44.5 million, of which EUR 5.4 million is allocated for Technical Assistance services. The breakdown by Regional Partner reflects differing starting points: Bosnia and Herzegovina and Albania require the largest investments as they are building systems largely from scratch or expanding limited coverage, while North Macedonia requires primarily sustainability investment given its already operational state-of-the-art system.

Regional Partner	Works & Supply (EUR)	TA (EUR)	Total (EUR)
Albania	10,500,000	1,100,000	11,600,000
Bosnia and Herzegovina	15,000,000	1,850,000	16,850,000
Kosovo	3,500,000	500,000	4,000,000
Montenegro	1,300,000	200,000	1,500,000
North Macedonia	1,800,000	350,000	2,150,000
Serbia	7,000,000	1,250,000	8,250,000
REGIONAL TOTAL	39,100,000	5,250,000	44,350,000

9.1. Cross-Cutting Recommendations

9.2. Peer Review and Capacity Building

A regional peer-review mechanism should be established for 112 and eCall implementation. Each partner can benefit from external assessments by experts from EU Member States or from neighbouring countries that are more advanced. Montenegro's and North Macedonia's experiences should inform reviews in Albania, Bosnia and Herzegovina, and Serbia. The Transport Community Permanent Secretariat and the European Commission can facilitate annual peer review visits where a multi-national team evaluates a Regional Partner's 112 system and provides recommendations. TAIEX workshops and EU Twinning projects should be continued and expanded, with consideration given to establishing a regional training centre or programme for 112 operators.

9.3. Advanced Mobile Location (AML) Integration

All Regional Partners partners should implement AML support in their 112 systems as a high priority. AML is a game-changer for emergency response, providing pinpoint caller location by automatically sending GPS coordinates from smartphones when 112 is dialed. As of 2025, AML is standard in 25 EU Member States. Implementation involves two main steps: requiring mobile network operators to configure their systems to support AML, and ensuring each 112 centre has the capability to receive and use AML data. ETSI specifications make it easy to implement with minimum investment. A regional AML coverage target of end-2026 should be set as a collective goal.

9.4. Reduction of Legacy Emergency Numbers

All Regional Partners currently use or historically used legacy emergency numbers. Phasing down the use of multiple emergency numbers is essential for a truly unified system. Multiple numbers can cause confusion and fragmentation. The goal should be to gradually converge to 112-only for public-facing use, as has been done in several EU countries. This involves policy decisions on timelines, technical forwarding of legacy numbers to 112 PSAPs, and coordinated public communication campaigns. Each Regional Partner should set a target date (e.g., 2028) for essentially unifying all emergency calls through 112.

9.5. Cybersecurity and System Resilience

Each Regional Partner must treat 112/eCall infrastructure as critical national infrastructure and apply robust cybersecurity and resilience measures. This includes security audits, firewalls, intrusion detection systems, and regular security patches on all PSAP systems. Data encryption for emergency communications and compliance with GDPR principles for data handling are essential. Resilience requires redundancy: backup facilities, dual power supplies, and the ability for one centre to take over another's calls if needed. Disaster recovery plans should be developed and tested regularly.

9.6. Cross-Border Coordination

Neighbouring countries should establish protocols to transfer 112 calls and information when needed. This is particularly important given the extensive border regions and cross-border travel in the Western Balkans. Bilateral MOUs should outline contact points and procedures for relay of emergency calls. Joint cross-border emergency exercises should be conducted regularly. Language capabilities at PSAPs for border regions should be enhanced. The Transport Community can facilitate these arrangements by providing templates and organizing bilateral talks.

10. Implementation and Follow-Up Mechanisms

10.1. Role of the Transport Community

The Transport Community Permanent Secretariat will take a coordinating role for 112/eCall implementation across the Western Balkans. This includes integrating 112/eCall into its Action Plans with visible targets and semi-annual reporting in TCT Progress Reports. A dedicated Working Group on Emergency Communications (112/eCall) should be established, bringing together officials from Interior Ministries, Telecom Regulators, and Civil Protection from each partner. The TCT will create and maintain a 112/eCall implementation dashboard showing key indicators for each Regional Partner, updated quarterly. This transparency will motivate progress and allow easy identification of where political attention is needed.

10.2. Timeline Targets

Q2 2026: Transposition of Decision 585/2014/EU and Delegated Regulation 305/2013 into national law across all Regional Partners.

Q1 2028: Full implementation of 112/eCall systems across all Regional Partners, with nationwide coverage, AML operational, and eCall PSAP capability.

10.3. Next Steps

1. Presentation and endorsement of fiches at the upcoming Regional Steering Committee meeting on 8 May 2026 in Budva, Montenegro, in coordination with the European Commission.
2. Bilateral discussions with each Regional Partner government to validate priorities, timelines, and cost estimates.
3. Identification of funding sources including IPA III programming, bilateral donor support, and potential EIB/EBRD financing.
4. Establishment of 112/eCall Working Group under TCT Technical Committees on Road Safety and Transport of Dangerous Goods.
5. Development of monitoring dashboard and regular progress reporting through 2028.