Government Blockchain Association
Emergency Management Working Group

Emergency Management Supplement

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Approval

Meiyappan Masilamani	Director, Standards	Apr 16, 2025
	Title	Date
Jordon Kestner (Apr 4, 2025 16:18 EDT)	Emergency Management Working Group Lead	Apr 4, 2025
Jordon Kestner	Title	Date

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1 Introduction

This document provides criteria for evaluating systems and solutions used by emergency management personnel for planning, execution, and review of activities. These systems support the management of resources, assets, and communication across domains such as healthcare, infrastructure, and community services. Emergency management systems encompass human and technical resources, ensuring preparedness, coordination, operational efficiency, and accountability during emergencies.

1.1 Purpose

The purpose of this document is to outline requirements, in addition to Blockchain Maturity Model elements, for developing trusted blockchain-based emergency management solutions for use before, during, and after emergencies.

1.2 Use

This document is intended for:

- Solution Developers: To guide the creation of dependable and trustworthy emergency management systems.
- Startup & Marketing Teams: To instill confidence in buyers and investors regarding solution reliability.
- Investors: To aid in performing due diligence before making investments.
- Acquisition Officials: To provide criteria for selecting blockchain-based emergency management systems.
- Assessment Teams To conduct BMM Assessments.

1.3 Scope

The scope includes evaluating systems or solutions used by emergency management personnel for planning, execution, and review. It covers the management of resources, assets, and communication across various domains, including healthcare, infrastructure, and community services. These systems apply to processes requiring preparedness, coordination, and response, ensuring operational efficiency and stakeholder accountability.

2 Requirements

Emergency Management solutions may have a full suite of capabilities or functions including:

- Emergency Management Planning

- Emergency Communications Management
- Asset Management
- Situational Awareness
- Asset Deployment
- Asset Monitoring & Maintenance

Depending on the features and capabilities of the solution, the following requirements apply to emergency management solutions:

2.1 Emergency Management Planning

Emergency Management Planning involves the determination of actions to be taken in advance of the emergency. It includes identifying the people, equipment, tools, procedures, and all other assets that must be ready to be used in an emergency.

The solution shall record the following information to an immutable ledger:

- Roles, responsibilities, and identities of relevant stakeholders involved in emergency management.
- The protocols for each emergency type, ensuring that clear, predefined steps exist for response actions.

2.2 Emergency Communications Management

Emergency communications management involves capturing and documenting all relevant interactions between stakeholders, including the protocols, contact details, and the flow of information during a crisis. By storing this information in an immutable ledger, transparency and traceability are ensured, fostering accountability throughout the response process.

The solution shall record to an immutable ledger the following information:

- Contact names, organizations, and contact details
- Communications protocols
- Communications are integrated into a common design or framework
- Emergency management related communications are recorded and include the parties, date/timestamp, and content.

2.3 Asset Management

Asset management involves the identification, disposition and deployment of resources required to address emergencies.

The solutions shall record the following data to an immutable ledger:

- Asset Identification that includes the types, names, identification, or any data used to identify people, products, or other assets that may be required in an emergency.
- Individual and product certifications. Calibration records, and maintenance records, service dates, service status and any other data needed to know the condition and readiness of an asset for deployment.
- Location, condition, and related data to the usability and availability of the asset needed during an emergency.
- Quantity of assets and information related to the availability of seats for immediate and ongoing access.

2.4 Situational Awareness

Situational awareness is the ability to perceive, understand, and effectively respond to a situation.

The solution shall:

- Record the location, condition, and status of people and resource affected by the emergency.
- Use real-time data to establish and maintain situational awareness.
- Provide severity and impact analysis to guide the allocation of assets during emergency situations.

2.5 Asset Deployment

Asset deployment is the act of sending or dispatching emergency assets to the location or state for them to be used to address and mitigate emergency situations.

The solution shall:

- Document the policies, processes, procedures, standards, and rules associated with asset distribution on an immutable ledger. This includes priorities based on severity and impact of the affected populations and resources. It also captures any changes on an immutable ledger.
- Record activities, date/time stamps, and stakeholders involved with the deployment assets on an immutable ledger.
- Records any deviation between the plan and actual asset distribution activities on an immutable ledger.
- Alert emergency management stakeholders when the actual activities deviate from planned activities based on escalation and notification rules.

2.6 Asset Monitoring & Maintenance

Asset Monitoring & Maintenance encompasses the continuous tracking, assessment, and upkeep of assets to ensure their availability, functionality, and reliability during emergency situations. This phase combines real-time monitoring of asset conditions with planned maintenance activities to avoid disruptions and ensure operational readiness throughout the emergency lifecycle.

The solution shall:

- Record the location, operational status, and condition of critical systems and components, such as battery life and part functionality.
- Provide automated alerts for maintenance needs, ensuring uninterrupted functionality.
- Record and validate asset data and maintenance statuses on an immutable ledger, with operational data optionally stored off-chain.
- Track asset condition, service schedules, and calibration requirements, ensuring regular and timely maintenance.
- Maintain a detailed history of maintenance activities, including service dates, providers, and compliance status.
- Monitor the real-time operational status of assets to ensure compliance with service protocols.
- Generate alerts for upcoming or overdue maintenance to prevent failures during critical moments.

This integration ensures a transparent, secure, and reliable system for asset management, bolstering emergency response capabilities.

Appendix A: Glossary

The following terms are used in this document and are defined in the table below.

Asset	A resource, whether human, technical, or material, that is utilized in emergency management operations.
Asset Deployment	The process of dispatching resources to specific locations or states to address and mitigate emergency situations.
Asset Maintenance	Activities to ensure the reliability and sustainability of equipment or systems, including diagnostics, repairs, and scheduled servicing.
Asset Monitoring	Continuous tracking of asset availability, operational status, and condition to ensure functionality during emergencies.
Distributed Asset Management System	A blockchain-based system for decentralized tracking and management of resources across multiple locations and stakeholders.
Emergency Communications Management	The capture and documentation of interactions between stakeholders, including protocols, contacts, and information flow during emergencies.
Emergency Management Oversight	The auditing and monitoring of emergency management processes to ensure adherence to protocols and standards.
Emergency Management Planning	The pre-determined actions, roles, and resources needed for effective emergency response.
Situational Awareness	The perception and understanding of real-time conditions to inform decision-making and response actions.