

USE CASE DOCUMENT

Road Crash Case Information System (CrashForm)

Prepared by: Tinatini Papashvili | Date: 23.04.2026
Version 1.0

Note: Due to privacy and security reasons, this project has been modified, and sensitive information is not displayed.

UC-1: Register New Crash Card

Description	Patrol inspector creates a new digital crash card at the accident scene, capturing location (with GPS), involved vehicles, persons, road conditions, and additional comments.
Actors	Patrol Inspector / Registrator
Preconditions	Inspector is authenticated in the system on the tablet. Tablet GPS module is active. Inspector is at the crash scene.
Post conditions	A new crash card is saved with status 'Registered'. Unique sequential ID is assigned. All mandatory fields are populated. GPS coordinates are recorded.
Trigger	A road crash occurs and the patrol inspector arrives at the scene.

Basic Flow

Step ID	Actor	Action	Notes
BF-1	Inspector	Opens the CrashForm application on the tablet and selects 'New Card'.	System displays empty crash card form.
BF-2	System	Auto-populates inspector name from user profile and captures GPS coordinates (N, E) from the tablet's GPS module.	FR-001, FR-002
BF-3	Inspector	Fills in crash location details: road name, distance from origin, municipality (from catalog), crash date/time, crash type (criminal/administrative), and crash subtype.	FR-003; Municipality selected from catalog.
BF-4	Inspector	Adds involved vehicles: selects vehicle type, defects, movement direction from catalogs. Enters vehicle ID and manufacturer/model.	FR-004; Can add multiple vehicles.
BF-5	Inspector	Adds involved persons: selects category, links to vehicle, enters sex/age, selects injury severity, seatbelt/helmet usage, alcohol/drug status, violations from catalogs.	FR-005; Can add multiple persons.
BF-6	Inspector	Fills environment and road condition data: road characteristics, surface type/condition, lighting, signals, junction type, climate, time of day.	FR-006; All fields from catalogs.
BF-7	Inspector	Adds any additional comments and selects relevant comment categories from catalog.	Free text available for 'Other'.
BF-8	Inspector	Clicks 'Save'.	
BF-9	System	Validates all mandatory fields. Assigns unique sequential ID. Saves the card with status 'Registered'. Records the creation timestamp and user.	FR-001, FR-009

Alternative Flow

Step ID	Actor	Action	Notes
AF-1	System	GPS signal unavailable: System displays warning. Inspector must enter coordinates manually.	Fallback for GPS failure.
AF-2	System	Mandatory field validation fails: System highlights missing fields and prevents saving until corrected.	Inspector returns to the relevant section.
AF-3	Inspector	Selects 'Other' in a catalog field: System changes dropdown to free-text input for that field.	Applies to vehicle type, movement direction, comments.

UC-2: Verify and Approve Crash Card

Description	Manager reviews a registered crash card, verifies data completeness and accuracy, attaches the scanned crash sketch, and changes the card status to 'Verified'.
Actors	Manager
Preconditions	Manager is authenticated in the e-Flow system. At least one crash card exists with status 'Registered'. Scanned crash sketch image is available.
Post conditions	Card status is changed to 'Verified'. Scanned sketch is attached to the card. Card becomes eligible for inclusion in analytical reports. Change history is updated.
Trigger	A new crash card has been registered and needs verification.

Basic Flow

Step ID	Actor	Action	Notes
BF-1	Manager	Opens the crash cards list ¹ in e-Flow and filters by status 'Registered'.	FR-010
BF-2	Manager	Selects a registered card to review.	Card details are displayed.
BF-3	Manager	Reviews all sections: location, vehicles, persons, environment, comments. Edits any incorrect data if needed.	FR-008; Changes logged per FR-009.
BF-4	Manager	Uploads the scanned crash scene sketch image to the card.	FR-007
BF-5	Manager	Clicks 'Verify' button.	
BF-6	System	Changes card status to 'Verify'. Records verification timestamp, manager identity. Updates change history.	FR-008, FR-009

Alternative Flow

Step ID	Actor	Action	Notes
AF-1	Manager	Data is incomplete or incorrect: Manager edits the card and saves changes before verifying.	Change history captures all edits.
AF-2	Manager	Scanned sketch not yet available: Manager saves edits but does not verify. Card remains 'Registered'.	Verification deferred.

¹ სსმ ბაზრათვების სია

UC-3: Search and Export Crash Data

Description	Analyst searches crash cards using multiple parameters, reviews results, and exports data to Excel for external analysis and black spot identification.
Actors	Analyst
Preconditions	Analyst is authenticated on the web platform. Verified crash cards exist in the system. Analyst is accessing from an authorized IP address within the MIA network.
Post conditions	Search results are displayed based on selected criteria. Data is exported to Excel(.xlsx) format for further analysis.
Trigger	Analyst needs to generate crash data for trend analysis, black spot identification, or reporting.

Basic Flow

Step ID	Actor	Action	Notes
BF-1	Analyst	Navigates to the web-based analytical platform and selects the search function.	FR-010, FR-013
BF-2	Analyst	Chooses between Quick Search or Advanced Search.	Quick search uses AND logic on key fields.
BF-3	Analyst	Enters search parameters: date range, municipality, crash type, GPS area, contributing factors, injury severity, and/or other filters.	Advanced search covers all card fields.
BF-4	Analyst	Clicks 'Search'.	
BF-5	System	Queries the database and displays matching crash cards in a sortable list with key columns (location, date, type, vehicles, persons, environment, status).	FR-010; Only verified cards for analytics.
BF-6	Analyst	Reviews results. Optionally clicks on a card to view full details.	
BF-7	Analyst	Clicks 'Export to Excel' button.	FR-011
BF-8	System	Generates and downloads an Excel file containing all visible columns from the search results.	FR-011

Alternative Flow

Step ID	Actor	Action	Notes
AF-1	System	No results found: System displays 'No records match your criteria' message.	Analyst adjusts search parameters.

AF-2	Analyst	Instead of export, selects a predefined analytical report from the Reports section.	FR-012; Report generated on screen.
-------------	---------	---	-------------------------------------