

■ PUBLIC SAFETY · SAFE CITY

Integrated Public Warning System (PWS)

Cell Broadcast and outdoor sirens working as one —
alerting every citizen in seconds, on every network.



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To reach millions of
phones

2G–5G

Works on every mobile
network

0

Apps or subscriptions
needed

40+

Cities and provinces
with PROTEI Safe City

OVERVIEW

Protecting citizens when every second counts

Climate extremes, technological risks, pandemics and local conflicts make a government's ability to warn its citizens a measure of its competence. Traditional channels — TV, radio, even SMS — are too slow, too vulnerable and never reach everyone.

PROTEI combines **Cell Broadcast** for instant mass alerts over mobile networks with a nationwide **outdoor siren system**. Deployed together, they deliver the widest territorial coverage, the shortest alert time and the greatest possible reach in disaster areas.

Built on international 3GPP and ETSI standards, the PROTEI Integrated Public Warning System is reliable, efficient and ready to scale from a single region to an entire country.

IMPACT

Delivering on key national priorities

Stronger state institutions

A national warning system supports sustainable development, builds public trust and creates modern infrastructure that attracts investment.

Bridging the digital divide

Cell Broadcast works on every mobile network (2G–5G) and phone, even in remote or low-income areas with poor Internet — no setup or subscription needed.

Extensive population coverage

Sirens communicate with the control centre over standard mobile networks, enabling wide, low-cost rollout without fibre.

Energy independence

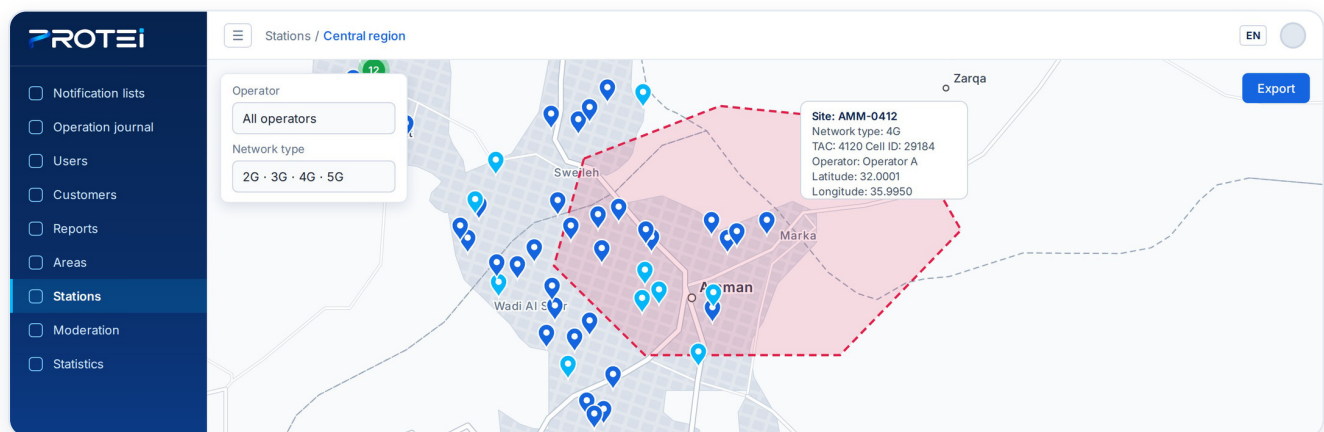
Every siren unit has a backup battery and surge protection, staying connected and operational during power outages.

Tailored to regional threats

Legally defined message types (Message IDs) for local hazards — earthquakes, floods and more — ensure relevant, trusted alerts.

Vendor-neutral integration

Seamless integration with radio and core equipment from the world's leading mobile infrastructure vendors.



Geo-targeted alert zones defined on the map — only phones inside the zone receive the alert

WHY PROTEI

Key Benefits

Localised for your country

- English and French user interfaces and technical documentation for local teams
- Sirens with built-in 3G/4G routers for sites without fixed links — also suitable for on-site alerting over private LTE
- Siren controllers adapted to extreme heat, with guaranteed regular operation

Unified and scalable

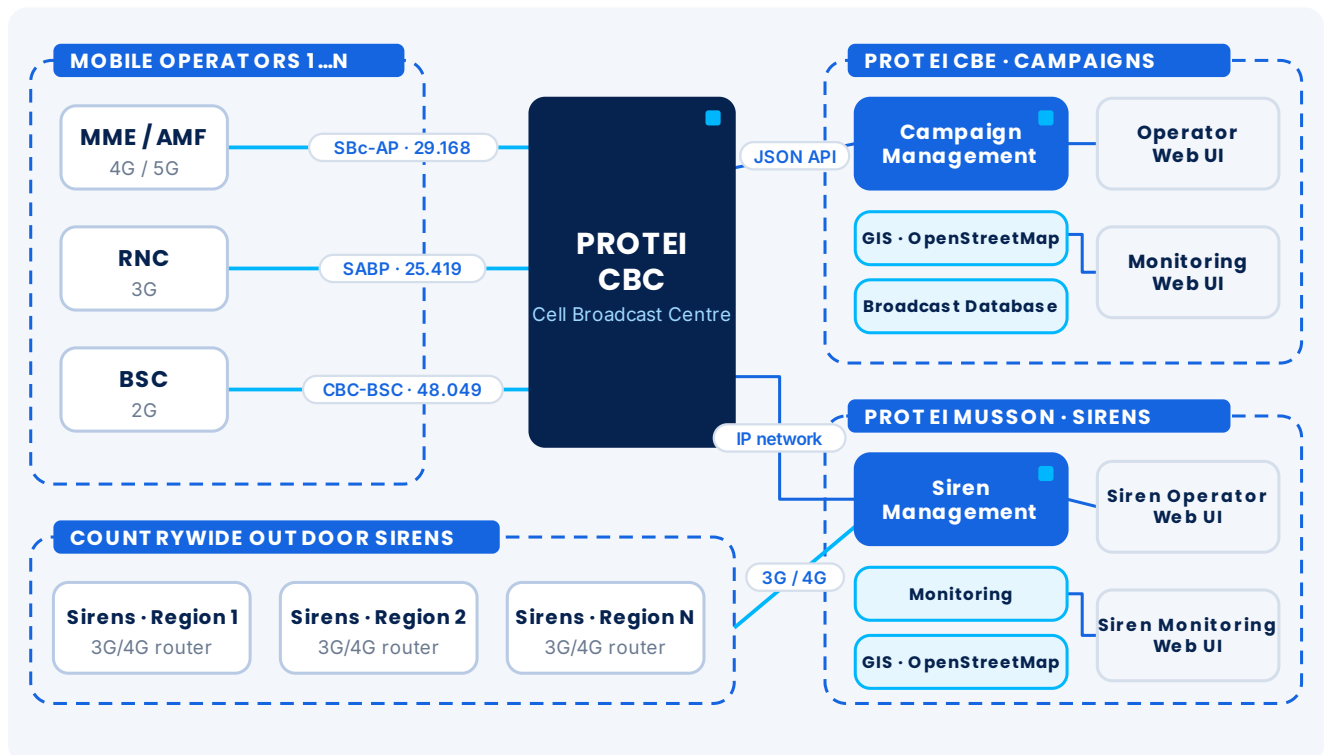
- Scales from regional to nationwide public alerting

- Simultaneous alerting through multiple operators' networks for redundancy and reach
- One interface for alerts across 2G, 3G, 4G and 5G
- Open geospatial foundation based on OpenStreetMap
- Redundant, virtualised architecture
- Sensor integration for enhanced monitoring of territories and facilities
- Role-based access control with full audit logging
- Open APIs for integration with external systems
- One alert platform for many channels: Cell Broadcast, SMS, voice calls, information panels and more

COMPONENTS

Solution architecture

PROTEI delivers the complete turn-key system or any of its components — the **Cell Broadcast platform** (CBC and CBE) and the **outdoor public warning system** (MUSSON).



- PROTEI Integrated Public Warning System: Cell Broadcast across all operators plus countrywide outdoor sirens

TECHNOLOGY

Cell Broadcast: the global standard for public warning

Cell Broadcast (CB) sends short messages simultaneously to every mobile phone in a defined area. Defined by ETSI and 3GPP, it is part of the 2G, 3G, 4G and 5G standards, also known as SMS-CB.

Unlike point-to-point SMS, Cell Broadcast is a **one-to-many, geo-targeted and geo-fenced** service — which is why it is the technology of choice for public warning worldwide. It adds minimal signalling load to the radio interface and to the links between the CBC and the core and radio network.

For public warning authorities

- Reach a handful of people or millions in under 10 seconds
- Only authorised agencies and the serving network can send alerts — and Cell Broadcast is highly resistant to spoofing
- Precise geo-targeting: only phones on base stations inside the target area receive the alert
- Update live alerts within seconds as a situation evolves

- Supported by almost all phones thanks to a decade of international standardisation

For citizens

- Works on nearly every smartphone, with no app
- A dedicated alert tone and vibration that override silent and Do Not Disturb modes
- Links, phone numbers and web addresses can be embedded in the alert
- Alerts in multiple languages

For mobile operators

- Never contributes to — or suffers from — network congestion
- Reaches inbound roamers without involving their home networks
- Unaffected by access-class or SIM barring
- No IMSI or MSISDN is used, so it fully respects personal-data regulations

Why governments choose Cell Broadcast

It is the only alerting channel that reaches every phone in an area at once — in seconds, without apps, subscriptions or personal data, and without being slowed by the network congestion that every emergency brings.

■ PLATFORM

PROTEI Cell Broadcast Centre (CBC)

PROTEI CBC broadcasts warning messages for the Public Warning System (PWS), including **CMAS** (Commercial Mobile Alert System) and **ETWS** (Earthquake and Tsunami Warning System) messages.

- One universal platform for Cell Broadcast across 2G, 3G, 4G and 5G
- Broadcast of alphanumeric or binary messages to any zone over pre-configured CB channels
- Repetition periods, multiple languages and CB encoding rules
- Flexible targeting: a single cell, a group of cells, all cells of a BSC/RNC or a location area — or areas assigned to specific external applications
- Per-provider broadcast parameters: period, repetition rate, priority and encoding

- APIs for multiple external applications and alert providers

■ PROTEI Cell Broadcast Entity (CBE)

PROTEI CBE manages broadcast campaigns and geo-zones through an intuitive web interface:

- Distribution-list management, message creation and forwarding
- GIS-based geographic targeting
- Advanced broadcast scheduling
- Role-based access control, detailed logging and CDRs
- Multi-language web interface

The screenshot shows the PROTEI web interface with a sidebar menu on the left containing options like Notification lists, Operation journal, Users, Customers, Reports, Areas, Stations, Moderation, and Statistics. The main content area is titled 'Notification lists / Amman - Zarqa flood warning'. It displays 'Notify List Parameters #17' with tabs for Delivery schema, Schedule, Areas, Stations, Notify journal, and Parameters. The 'Areas' tab is active, showing details for a notification list with status 'Active', moderation 'Approved', created on 15.09.2026, and last retry on 17:21:05 24.09.2026. The name is 'Amman - Zarqa flood warning', source address is '911', notification period is '15.09.2026 21:00 - 30.09.2026 21:00', media type is 'Cell Broadcast', storage time after stop is '24' hours, and load is '500' operations per second.

The screenshot shows the PROTEI web interface with the same sidebar menu. The main content area is titled 'Notification lists / National test alert / Parameters'. It displays the 'Parameters' configuration for a test alert. The text field contains: 'This is a TEST of the National Public Warning System (flood, earthquake, severe weather). No action is required. This is not a real emergency.' followed by its Arabic translation. Below this, there are input fields for 'Repetition period (s)' set to 30, 'Number of broadcasts' set to 40, and 'Message identifier' set to '4371 - Extreme alert'. There are 'Save' and 'Close' buttons at the bottom.

- Cell Broadcast Entity: alert campaigns and message parameters

SIRENS

PROTEI Outdoor Alert Platform

The Outdoor Alert Platform manages a geographically distributed network of public-address and street-siren systems from one place.

Key benefits

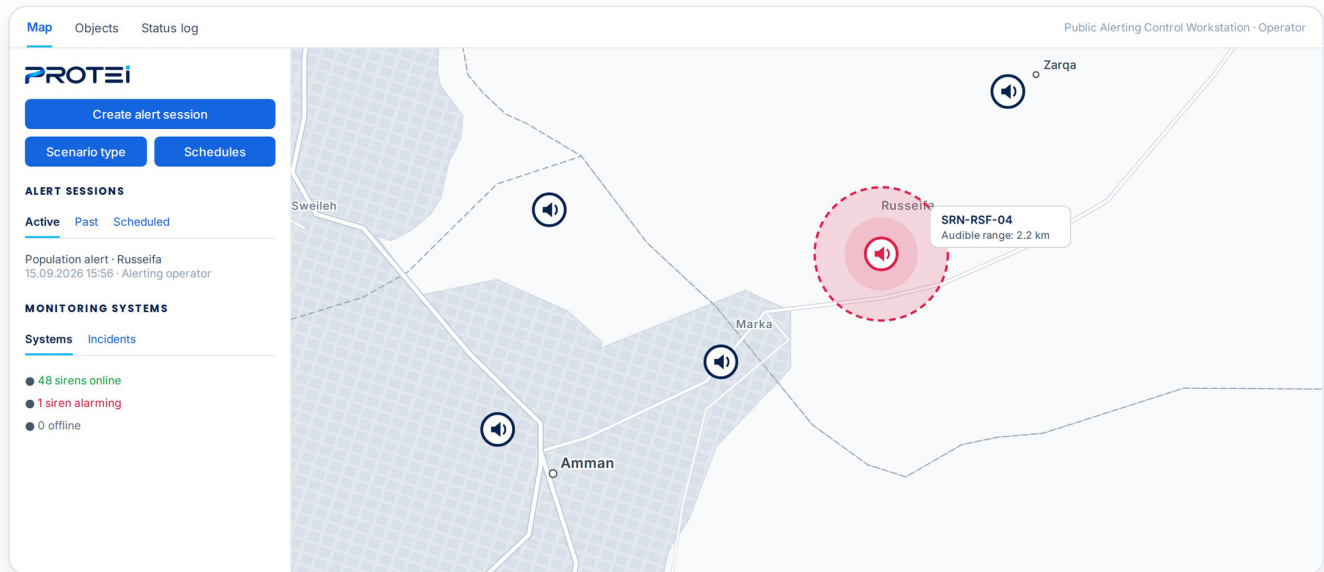
- Advanced alert scheduling logic
- Role-based access control and activity logging
- Web interface and documentation in three languages
- Rapid deployment that reuses existing infrastructure
- Any communication channel: wireless, digital, analogue or IP
- Hierarchical alerting from national to regional level
- Integration with monitoring systems — fire, air-pollution and other sensors

Components

Core: regional hardware–software module; web interface; outdoor alert equipment sets, each with a controller and a group of loudspeakers. **Optional:** dispatcher hardware–software module; integration gateway for third-party equipment and sensors.

Operator web interface

- Create, edit, activate, deactivate and archive notifications
- See every siren on a map, including its audible range
- Bind notifications to predefined geographical zones
- Role-based access control, execution logs and personnel activity logs
- Live status monitoring of every siren on the map



- Live siren map with audible range

PUBLIC SAFETY PORTFOLIO

Part of PROTEI Safe City

The Public Warning System is one pillar of PROTEI's integrated Safe City portfolio — field-proven products that meet the needs of every stakeholder, unified on an open, IP-based architecture that is easy to extend.

911 Emergency Response

A unified emergency-call and dispatch system that connects citizens with police, fire, ambulance and rescue services.

Safe City Information System

An integrated platform with an information-exchange bus that links emergency response units and city services.

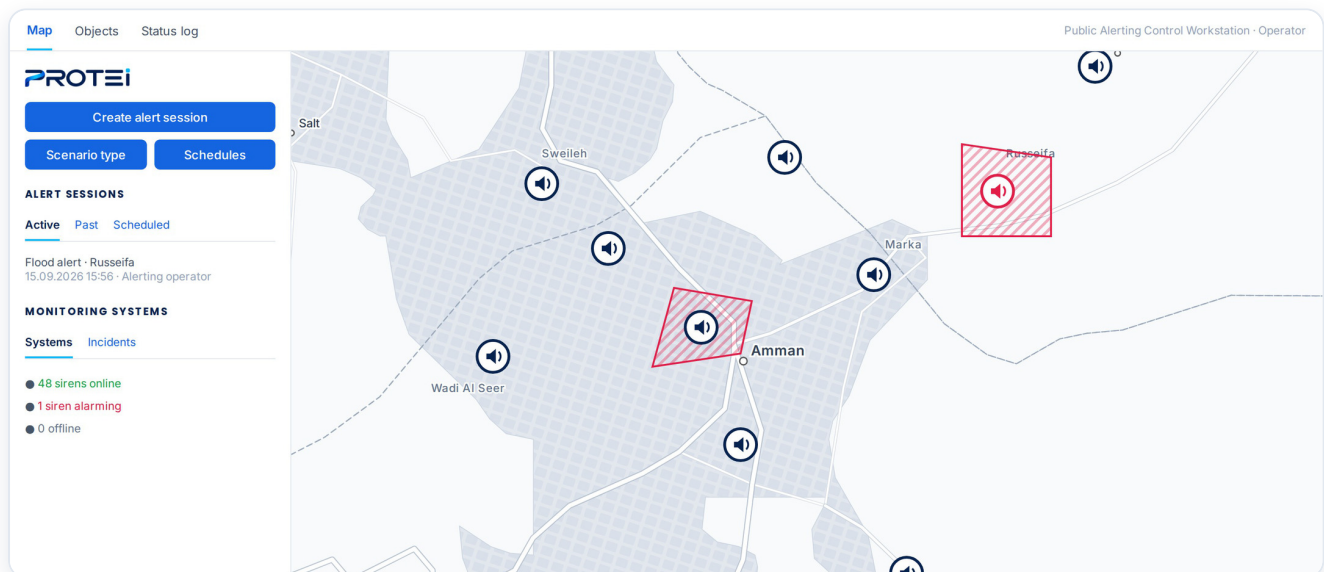
Public Warning

Cell Broadcast, outdoor sirens and other alerting channels, managed from one place.

PROTEI has developed, deployed and maintained Safe City platforms in **more than 40 cities and provinces** across several countries. Our engineers

support every stage — from national planning and regulatory alignment to integration with mobile operators, training and 24/7 support.

- ✓ Turn-key delivery or individual components
- ✓ Redundant, virtualised and secure architecture
- ✓ Integration with all mobile operators in the country
- ✓ Open APIs for government and third-party systems
- ✓ Localised interfaces and documentation
- ✓ Training, maintenance and 24/7 support



Outdoor siren management: zones, schedules and live status on one map

Ready when it matters most

Talk to PROTEI about a national or regional public warning system — designed around your threats, your regulations and your mobile operators.



■ ABOUT PROTEI

Carrier-grade telecom solutions since 2009

Founded in 2009 and headquartered in Amman, Jordan, Professional Telecommunication Incorporation (PROTEI) designs and delivers carrier-grade software for mobile and fixed network operators, MVNOs, enterprises and governments. Our portfolio of 50+ systems and solutions spans core network, roaming, messaging, value-added services, data management, public safety and customer care.

With development centres in Jordan, Europe and the CIS, live deployments across the Middle East, Europe, Africa, Latin America, Central Asia and the CIS, and regional offices in the UAE and Central Asia, PROTEI serves more than 400 clients. Every platform is designed in-house under ISO 9001:2015 and ISO 14001:2015 certified quality management.

17

Years in telecom

400+

Clients worldwide

45

Countries

50+

Systems & solutions

Turn your network into your next growth engine.

Talk to our experts about public warning and Safe City solutions for your country — and see how PROTEI can help you grow revenue, cut costs and protect every subscriber.

Professional Telecommunication Incorporation (PROTEI)

Headquarters · Amman

Wasfi Al-Tal Street, Al Otoum Business Center 98, Suite 205
P.O. Box 961741, Amman 11196, Jordan

T +962 6 560 78 33

E sales@protei.me

GCC Branch · Dubai

Business Village Deira, Al Maktoum Road
4th Floor, Block-B, P.O. Box 183, Dubai, U.A.E.

T +971 (0) 4 230 6029

E sales@protei.me



www.protei.me