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SMART CITY CHALLENGE 2025

City Challenge

Max 3 pages

send to smartcity@taltech.ee by Sept 30, 2025

Challenge Title – Information and Prevention as Disaster Defense

City/county and country – Burgas, Bulgaria

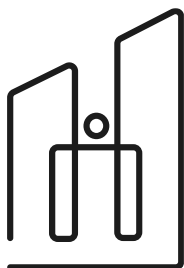
Main contact from your city/county – name, organization, job title, e-mail, phone

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1. What is the future urban challenge that would need a solution to?

- **Please describe the challenge of your city / county neighboring a city?**
- Burgas is a coastal city that faces growing exposure to extreme rainfall, flash floods, and seasonal forest fires. The municipality already operates a flood-monitoring system and is in the process of developing a complementary fire-monitoring network, which includes strategically placed smoke detectors in high-risk zones. However, as detection capacity expands, a critical gap persists in the “last mile” of communication. Citizens still lack fast, reliable, and inclusive access to information on current conditions, potential risks, and appropriate responses in different situations. Without continuous and preventive communication, monitoring data cannot help residents prepare in advance or reduce their vulnerability. The problem is especially acute in remote and peri-urban neighborhoods with limited connectivity, where residents are least likely to receive timely updates through web platforms or mobile applications. The challenge, therefore, extends beyond technical detection to ensuring that risk signals are translated into clear, accessible, and multilingual information disseminated through multiple channels—such as SMS or cell broadcast, public displays, and municipal kiosks—so that all citizens, whether online or offline, are reached. This issue is common to many medium-sized European cities, positioning Burgas as an ideal pilot site to demonstrate a scalable model for transforming monitoring data into effective tools for public awareness and preparedness.
- **Which category your challenge is primarily in: safe city, happy city, and climate resilient city? – safe city/climate resilient city**
- **Why is it important for your city to solve it? How big priority it is for you and why?**
Protecting lives, infrastructure, and natural assets is a core priority in Burgas’s Plan for Integrated Urban Development, which treats climate resilience and public safety as cross-cutting goals. In





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light of the increasing frequency of climate-related emergencies, it is imperative that citizens have access to real-time trustworthy information and training on appropriate responses. That requires a diverse, redundant, and multilingual channels of communications beyond just websites and online dashboards: electronic noticeboards, municipal kiosks in public spaces, mobile apps on top of SMS/alerts, local radio/TV cut-ins. Without such multi-channel dissemination, monitoring investments cannot deliver full value at the moment of danger; with it, Burgas turns raw risk data into immediate, actionable guidance for all residents, including those with limited connectivity.

- **Is this a unique challenge/problem of your city, why or is this by your knowledge a challenge/problem that many cities have – which kind of other cities?**

This challenge is widespread across Europe's cities, which face ever more frequent climate emergencies. The 2024 floods in Valencia underscored how vital it is to deliver reliable, actionable alerts—and to pair them with clear guidance on what to do, when, and where. Solutions built on open standards, multilingual messaging, and redundant channels are readily scalable and highly transferable and should be of interest to municipalities across the continent.

2. Innovation.

- **How have you solved that issue so far? Why aren't the present solutions good enough? Are there legal obstacles, which ones?**

So far, alerts have been shared via websites, press releases, and social media, which are fragmented, slow, and exclude offline citizens. These "pull" channels require people to be online and actively checking at the right moment, while algorithmic feeds can bury urgent posts. In outages or low-connectivity areas—and for tourists, older adults, or people with disabilities—these channels often fail to deliver location-specific, time-critical guidance.

- **What should be the main features, characteristics of the future solution to be potentially best for that challenge or problem?**
 - Informational displays in administrative/public spaces to display real-time alerts.
 - Autonomous alerting system linked directly to hazard monitoring data.
 - Visual & multilingual warnings for accessibility (elderly, disabled, tourists).
 - Offline channels
 - Public information campaigns so citizens know how to react.

3. Expected impact of your pilot solution.

- **What is the expected impact to your city environment you expect to see if the challenge gets solved?**
- Better-informed and better-prepared citizens will reduce the overall impact of disasters. Continuous communication about current conditions and potential risks will strengthen preventive action, limit unnecessary evacuations, and lower recovery costs. Multi-channel information tools (SMS/cell broadcast, kiosks, electronic boards, local media) will help residents understand risks in



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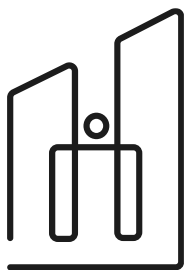


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advance, minimize panic during emergencies, and support improved planning of infrastructure, drainage, and vegetation management.

- **What is the expected impact to your city governance you expect to see if the challenge gets solved?**
Equitable access to timely, clear, and multilingual information will ensure that all groups—including offline residents, older adults, people with disabilities, and tourists—are reached. Preventive messages and practical guidance on how to respond in different scenarios will increase household preparedness, improve compliance during emergencies, and gradually build a culture of resilience across the community.
- **What is the expected impact to your city governance you expect to see if the challenge gets solved?**
Transparent and traceable communication processes will strengthen trust and inter-agency coordination. By turning monitoring data into preventive information, the city will maximize the value of existing systems, reduce false-alarm fatigue, and improve allocation of emergency resources. Regular reporting and demonstrated results will also make it easier to meet national and EU requirements, opening opportunities for future funding and replication in other municipalities.

4. Piloting

- **Why would you be interested to become a piloting partner of a proposed solution to the challenge you are describing here? Describe shortly your capability to participate.**

Burgas is an ideal pilot partner because of its:

- **Operational base:** The city already runs a flood-monitoring system and is developing a fire-monitoring layer (incl. smoke detectors in risk zones), so data streams will be available for automated, last-mile alerts.
- **Strategic fit:** The Plan for Integrated Urban Development 2021–2027 and Smart Burgas digital agenda prioritize climate resilience, public safety, and data-driven governance—ensuring policy backing and continuity beyond the pilot.
- **EU project experience:** Burgas has participated in a number of EU-funded projects, such as in Regions4Climate (R4C) and MED-IREN—both funded Horizon Europe, which focus on improving disaster preparedness, bringing methodologies, partner networks, and replication pathways directly relevant to multi-channel warning systems.
- **Quadruple-helix capacity:** Strong ties with local academia, industry/telecom partners, and NGOs enable co-design, user testing (incl. older adults, people with disabilities, low-connectivity residents, tourists), and outreach campaigns.
- **Implementation readiness:** Municipal teams can provide sensor/data access, as well as local expertise.
- **High transferability:** As a Black Sea city of ~200,000 residents with coastal and peri-urban risk profiles, results will generalize well to many medium-sized European municipalities.



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