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Cell Broadcast vs Sirens: Which Solution is the Most Spatially Efficient? Early findings in the southern part of France

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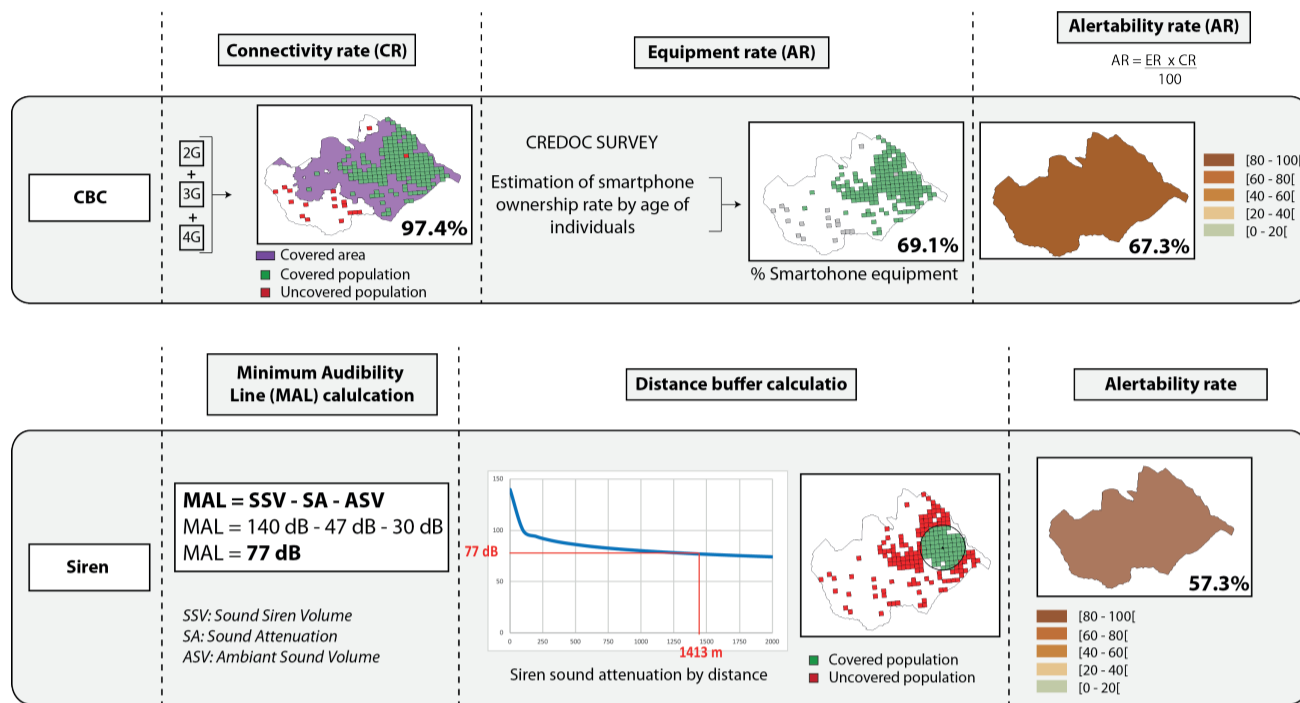
Cell Broadcast vs Sirens: Which Solutions is the Most Spatially Efficient?

Early findings in the southern part of France

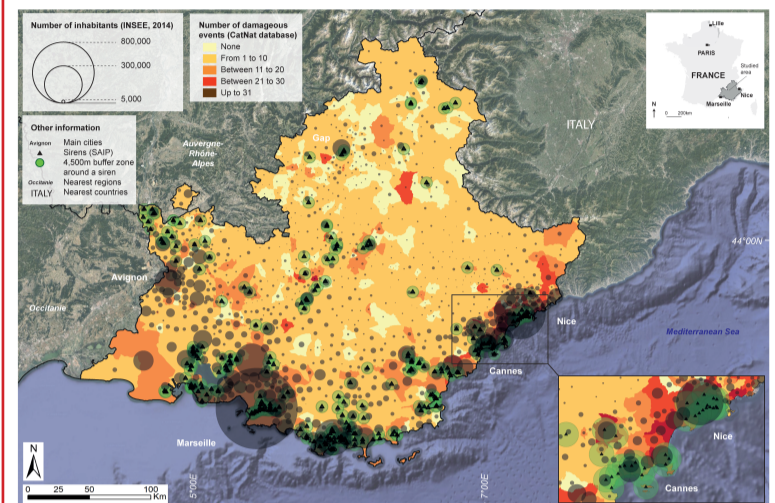
Scientific objectives

- Propose a **method** to estimate the **spatial potential** of **Cell Broadcast (CBC)** for alerting the population,
- Evaluate the **results in a test area** (the southern part of France) and compare it to the spatial coverage of **sirens network**,
- Identify **variations in the spatial efficiency** of a CBC alert according to **territorial characteristics**.

Data and methods

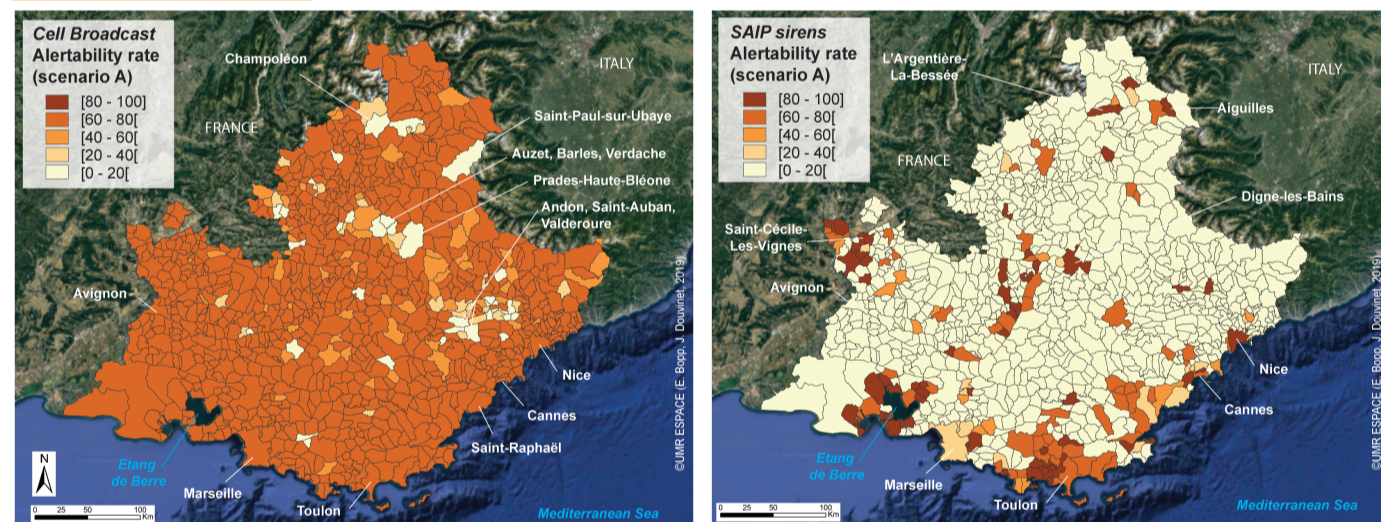


The test area



- Paca region:**
- 5,500,000 inhab.
 - Population heterogeneity (coastline/mountain).
 - Many natural and anthropological risks (+100 deaths over the last 30 years).
 - 253 SAIP sirens.

Early findings

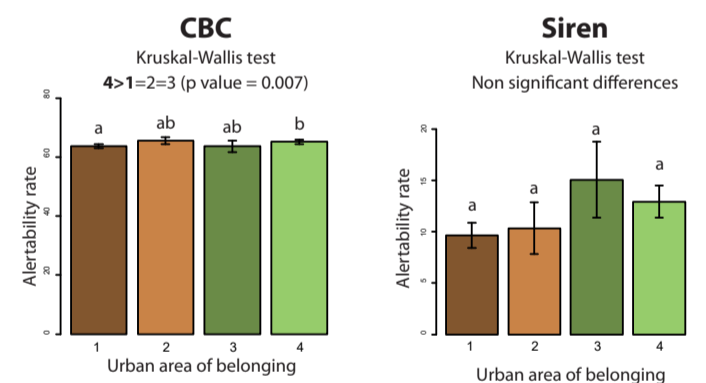


	CBC	Siren
Alertability rate	69.3%	38.2%
Municipal average	34.4%	11.3%
Gini index (0: equality; 1: inequality)	0.08	0.87
Moran index (-1: neighbouring heterogeneity; 1: neighbouring homogeneity)	0.28	0.22

- CBC wins!!:**
- most **effective**;
 - most **equal**;
 - most **contiguous** between neighbouring municipalities.

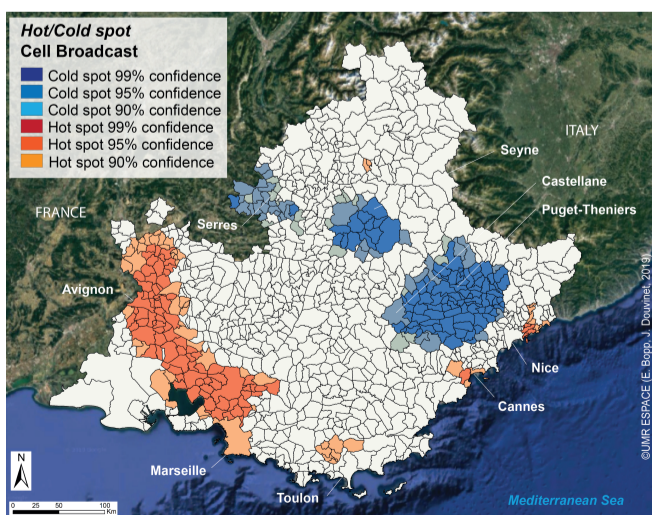
Difference between urban and rural areas?

CBC better in the Urban Area (UA) > 100,000 inhab. than in rural area. No significant territorial difference Lfor sirens.

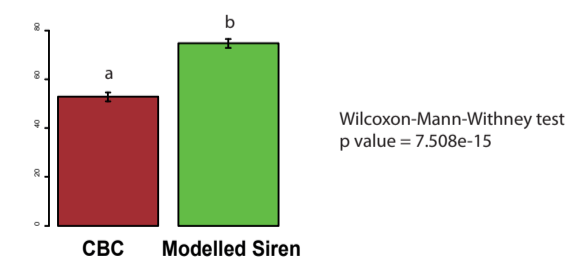


- 1: Outside UA
 2: UA < 50,000 inhab.
 3: 50,000 inhab. < UA < 100,000 inhab.
 4: UA > 100,000 inhab.

CBC cold spot detection



The alertability rate of **modelled sirens** is **statistically better** than the **CBC** alertability rate in cold spot territories.



Modelling of a siren in the town hall of each of the municipalities identified as a «cold spot» for the CBC alert.

Prospects and future issues

Issues

Evaluate the effectiveness of other alerting tools.

Assess the social demand for alerting tools by taking into account the territories in which people live.

Test alerting tools during crisis exercises.

Work in progress

- CBC > ✓
- Siren > ✓
- Geolocated SMS > ✓
- Smartphone app > ✓
- IoT > in progress

Survey > in progress

ANR project > beginning in 2020

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Publications

Scientific publication in progress, follow @Esteban Bopp on for more details.