



**CITY MANAGERS
COMMUNITY 2021**

photo: Robin Worrall on

5G deployment on a Metropolitan Scale

Its opportunities and difficulties

City Managers Community 2021 Road-map

June

Launch and
announcement CMC'21:

***"5G Deployment in
Metropolis"***

Opening of the 5G
portrait survey

7 July

Webinar to set the
scene, learn the state-
of-affairs, discuss first
impressions and
issues as well as
delimit topic further
for next activities

20 October (tbc)

Private Metropolis
membership
workshop, incl.
external actors,
addressing specific
"challenges"

17 November (tbc)

Celebration of the
public City Managers
Community 2021
event

5G – A Brief Definition

- 5G is a standard for broadband cellular networks with higher bandwidth than its preceding 4G standard.
 - 5G uses **higher-frequency radio waves** than 4G
- The definition of 5G has **shifted** from referring principally to higher download speeds to a more comprehensive augmentation of digital technology that requires a **greater infrastructure commitment**.
 - Especially in the form Multiple-Input and Multiple Output Systems or MIMOs

State-of-Play



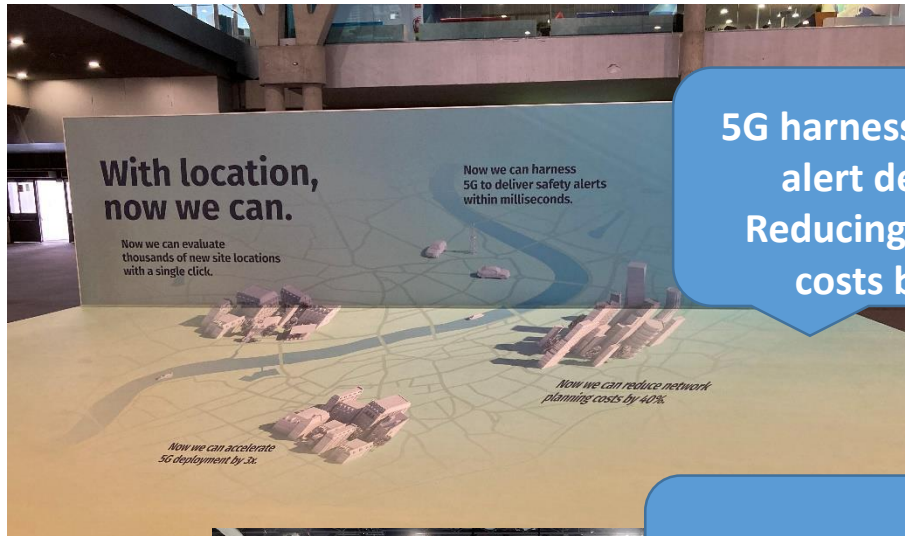
State-of-Play (national levels)

- **USA:** 5G will largely consist of re-use of existing infrastructure (LTE spectrum in the UHF ranges: 300 MHz to 3 GHz); 5G use of high centimetric bands (25–30 GHz and higher) is less justified in USA than more urbanized and densely populated countries
- **Japan:** trials since 2014, advanced in terms of identifying challenges
- **China:** advanced in terms of trials pushed by national companies like Huawei and ZTE
- **South Korea:** since 2019, roll-out focusing on exportable 5G equipment, especially chipsets usable in smartphones, extremely advanced
- **Singapore:** eminently urban use proceeding from business cases which retain older UHF technology where practical; avoiding the “build it and they will come” syndrome of other countries (Blackman and Forge)
- **The EU:** at least nine member states have published 5G actions plans – Austria, France, Finland, Netherlands, Spain, Sweden, Germany, Luxembourg and the UK (European 5G Observatory, 2019). Since December 2018: some regulatory context for 5G. Proceeding largely in **city-level piloting** (e.g. Amsterdam, Barcelona, Berlin, Madrid, Milan)

Public Services

- 5G's effect on public administration will likely be to allow for more efficient decision-making through real-time information concerning a host of areas, from traffic to energy expenditure;
- The Potential
 - Remote surgery via robotic equipment operated by a surgeon in another country
 - Sensors providing drivers with real-time information concerning free parking spots
 - Sensors and drones providing rescue services/police/firefighters with real-time information concerning topography, temperature, building accessibility, escape routes, etc.

Mobile World Congress 2021 Impressions



5G harness for safety alert delivery/
Reducing planning costs by 40%



Automated vehicles combined with health services



Augmented reality



First impressions from the inputs received by the CMC' 21 5G Metropolitan Portraits

- The majority of metropolitan territories (and cities) are in the pilot or “making of” stage, only few real-life cases in place or implemented.
- “Connected vehicles” represent one of the most popular use-cases for respondents.
- Those approaching 5G mentioned a wide array of stakeholders.

First impressions from the inputs received by the CMC' 21 5G Metropolitan Portraits

- In terms of governance, both vertical (national-level) coordination and a grouping/association of municipalities were favored.
- Dilemma or dichotomy between risks & benefits, national & local governments' initiatives/strategies (competences).
- The range of percentage of population with 5G standard network access in the Metropolis member spaces varies from 10%-100%.

AGENDA

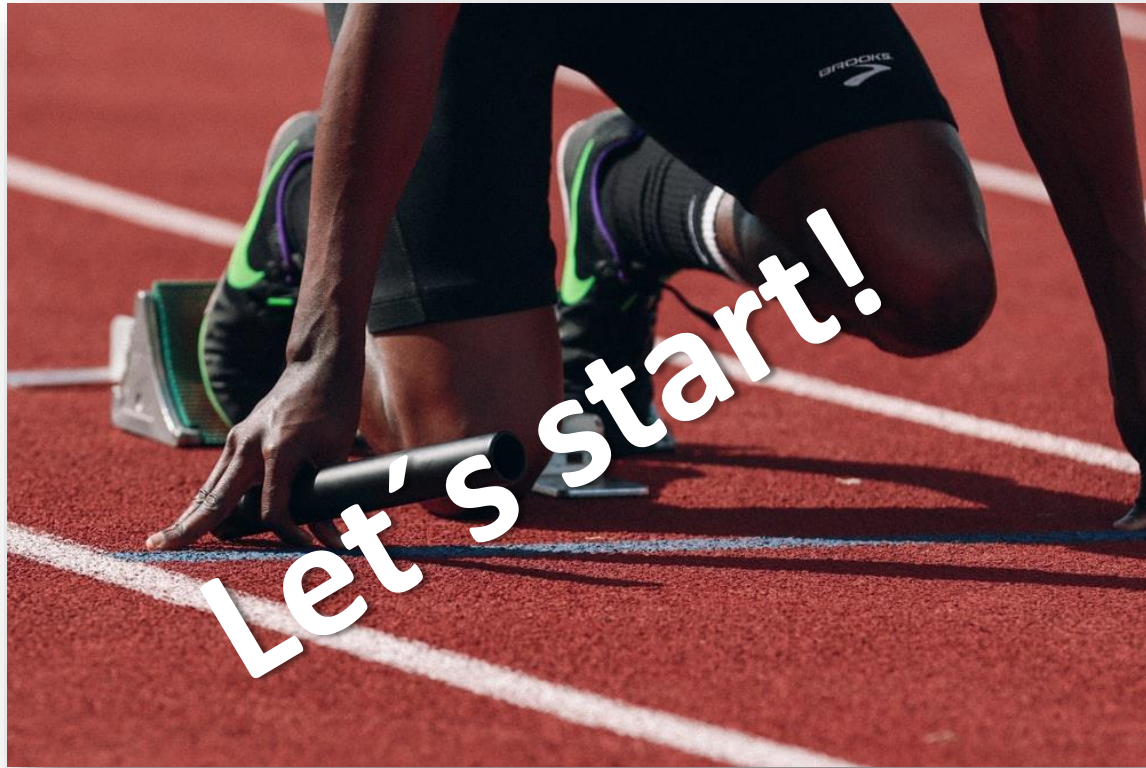
Round of introductions *(10min)*

The approach of the Metropolitan Area of Barcelona towards 5G *(10min)*
Ramon Torra, General Manager, Metropolitan Area of Barcelona

Interactive slot *(10min)*

5G actions in the City of Madrid *(10min)*
Fernando de Pablo, Director-General of the Digital Office, Municipality of Madrid

Open debate on the role of city and metropolitan governments on 5G implementation regarding: 1. Risk assessment/mitigation 2. Private sector involvement *(30min)*



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