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OPERATING EUROVISION AND EURORADIO

WHAT WE HAVE LEARNED IN THE LAST THREE YEARS …

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UKRAINE : LESSONS LEARNED … SO FAR …

BREAKING THE SILENCE …

- **"The absence of information in a blockade accomplishes two goals**.

- **Chaos is the first**. People don't know what's going on, and they panic. At first I couldn't understand why Mariupol fell apart so quickly. Now I know it was because of the lack of communication.

- **Impunity is the second goal**. With no information coming out of a city, no pictures of demolished buildings and dying children, the Russian forces could do whatever they wanted. If not for us, there would be nothing.

- That's why we took such risks to be able to send the world what we saw, and that's what made Russia angry enough to hunt us down.

- **I have never, ever felt that breaking the silence was so important"***.

*By MSTYSLAV CHERNOV AP reporter in Ukraine - https://apnews.com/article/russia-ukraine-europe-edf7240a9d990e7e3e32f82ca351dede

THE IMPORTANCE OF BROADCASTING

- **Broadcasting is essential to sustainably reach entire populations**.

- A large number of actions have been already stimulated and coordinated by EBU T&I to support UAPBC involving the use of terrestrial and satellite-based resources. We have been using all available broadcasting technologies of the last 100 years including MW and SW transmissions and extensively satellite technologies.

- The importance of broadcast transmitters is underlined by the fact that they are key targets of the Russian army, like they were already during the Yugoslavian war in the 90's, underlining the **need to design, develop and deploy future resilient information networks** that must involve multiple technologies in a sustainable combination of complementary technologies.

- **Keeping information contribution and distribution as well as educational services** alive even when key infrastructures are destroyed is the **renewed requirement for any democratic society**.

- Delivering to 100% of the population **reliable information coming from multiple independent sources and independent networks** is the strategic weapon against disinformation and polarized news.

- The progressively disrupted or occupied resources dedicated to terrestrial broadcasting as well as internet and cellular networks in a large part of the Ukrainian territory **call for a number of actions in the short and medium term** involving the use of terrestrial and satellite-based resources.

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THE PANDEMIA ACCELERATOR

...

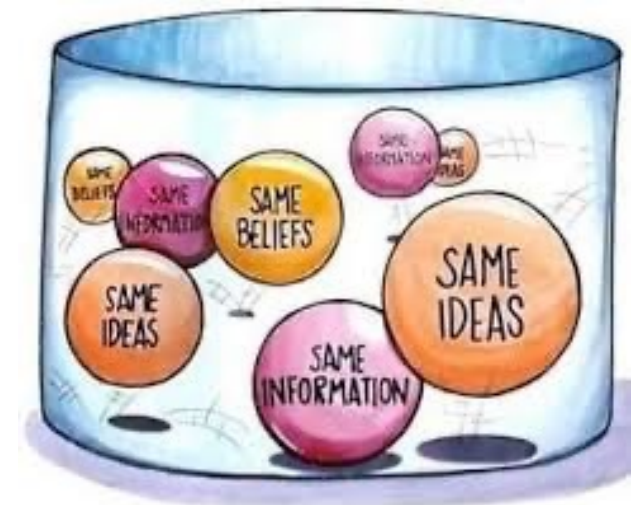# BROADCAST AND ONLINE ...

...

PSM building communities

- « Social media platforms based on a business model that monetizes anger & negativity are causing untold damage to societies. Hate speech & misinformation are proliferating. Our data is being bought & sold to influence behavior »*
  - **Antonio Gutierrez – UN Secretary General**

- Historically **PSM** have been delivering content to people so that they **can share content together**,

- **Online giants** are trying to **isolate each user** so that they can more easily extract data and money and control their individual "loyalty".

- **The ability to build communities gave the humans an evolutionary advantage** and PSM are mandated to help people sharing experiences for a functioning society

VS.

Antonio Arcidiacono – CTO EBU – November 25th 2022   * https://twitter.com/antonioguterres/status/1574111500201074688)

PSM INGREDIENTS

- The digital education of a large share of the population is today allowing the development of new contents and experiences
    - **combining individual interactions with collective experiences**

- **We have a structural social advantage that needs to be protected and developed further.**

- **WEB 3.0 applications facilitate** the direct involvement of citizens
    - **participating to content production** for a collective fruition
    - becoming the **virtual shareholders** of PSMs
    - Citizen becoming a structural part of our future developments

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BRINGING PEOPLE TOGETHER

- It is **not the oculus isolation** of the FB metaverse that we should go after

- The new **PSM Universe should bring people together**, outside of their bubble.
  - **increasing social interactions**
  - Creating the environment in which informed citizens can share their experiences and find a better way of living together

- It can simply be an outdoor experience where I combine my physical presence (from a simple promenade to attending a live concert or sport event) with a common, location dependent **experience that I can share with other people enjoying the same emotions.**

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BROADCAST AND ONLINE : TOGETHER

- Some industry voices predict or even call for **the death of broadcasting which** is not an improvement !

- Dismantling broadcast is an attempt to **attack the foundations of collective media content in favour of individual media content.**

- The result is the segmentation of society that **distorts the social bases** that have sustained the accelerated evolution **of our societies**.

- We need a world where **broadcasting is intimately combined with online** pipes to each user, a world where the social dimension continue to nurture a better society

One-to-one

One-to-many

USE THE LAW OF PHYSICS WHERE THE WORK BEST

› **Leveraging the collaborative advantage of 5G infrastructures**: providing services over a wide area using a cooperative multilayer architecture

› **Enhanced user experience:** creation of a delivery system able to effectively meet the evolving user requirements for access to media services :

  › from **highly personalised** and interactive to **highly popular live** events

  › in a technically and **cost-efficient** way

› **Intelligent standard based receivers**: optimising reception of the provided services (from broadcast and multicast to two-way unicast services)

5G Satellite

5G terrestrial transmitters

5G-Cellular infrastructure
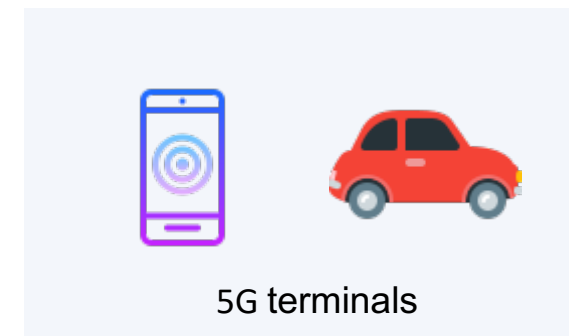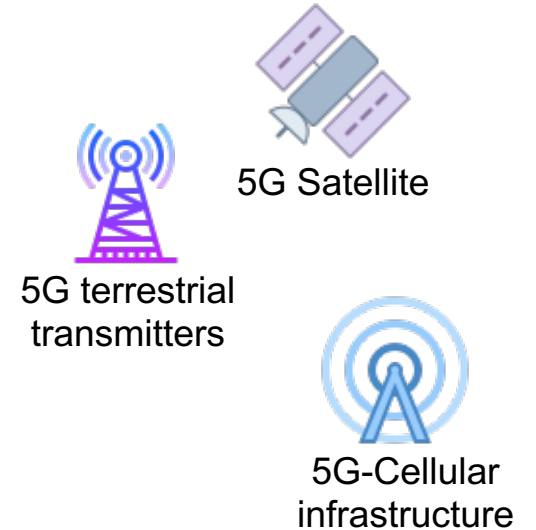
5G terminals

A MULTILAYER STRATEGY FOR A CONVERGENT DEPLOYMENT

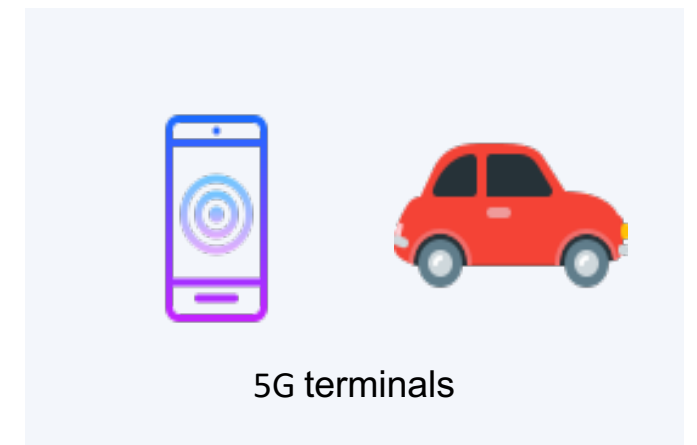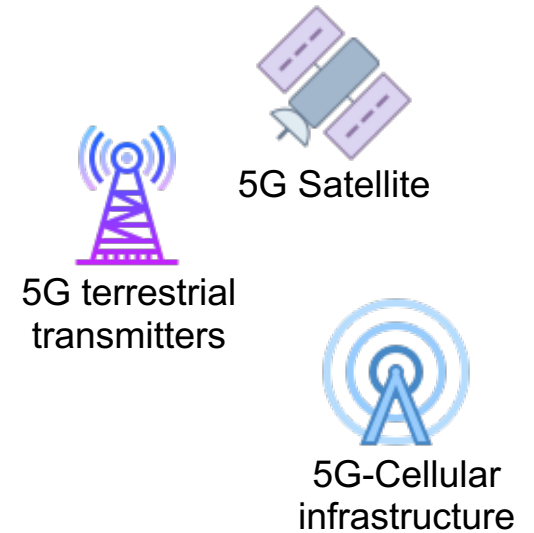Live Broadcast will deliver IP background content to the whole population

Multicast Push services will leverage upon the ability of **receiving gateways/**terminals **to smart cache able to manage content locally**

Playout in linear or non-linear mode.

Any user gateway/receiver **will have the ability of receiving broadcast/multicast + two-way unicast traffic** connection used in combination with the broadcast/push data delivery and for content DRM/management

Sharing the infrastructure (CAPEX and OPEX) with other essential broadcast services : e.g. civil protection, automotive industry, etc.

Combining services will guarantee the related economies of scale.

5G Satellite

5G terrestrial transmitters

5G-Cellular infrastructure

5G terminals

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SATELLITE AND TERRESTRIAL NETWORKS

› No single platform can serve all use cases : **a collaborative use of satellite and terrestrial infrastructure** is beneficial to both sides

› The end customers doesn't care about the infrastructure -> combining satellite and terrestrial infrastructure should be seamless, **leveraging upon 5G multilayer orchestration**

› To **sustainably reach 100% of the population, and 100% of the territory** for mobile reception, with guaranteed quality of service, it is necessary to deploy native IP satellite infrastructures interoperable with terrestrial infrastructures but also to **develop consumer grade end user terminals** that can be deployed in any market , in countries developed and under development
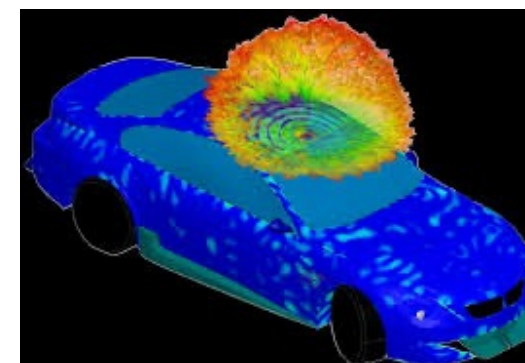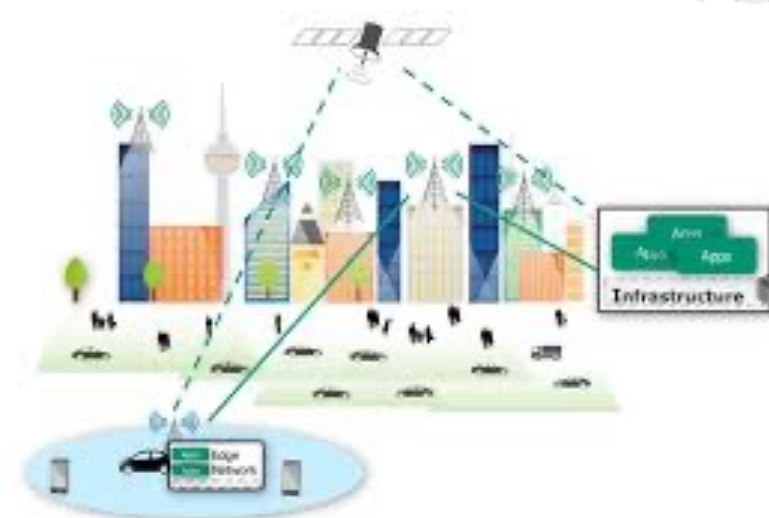
IP BASED CONTENT DISTRIBUTION

› Content (encrypted or not) is distributed in broadcast /multicast mode (using a **push flute** system) protected with an **application layer systematic coded interleaving** system

› Content is received at the Gateway level, information packets (or chunks) are decoded/de-interleaved and those with a negative CRC **repaired in real time using a unicast connection**

› All correct packet/chunks will be **stored using a local storage server** for immediate or offline consumption

› Content selected for playout will be **DRM cleared and played out** to end user devices

› This solution allows for a **fully scalable combination of terrestrial and satellite broadcast and unicast**

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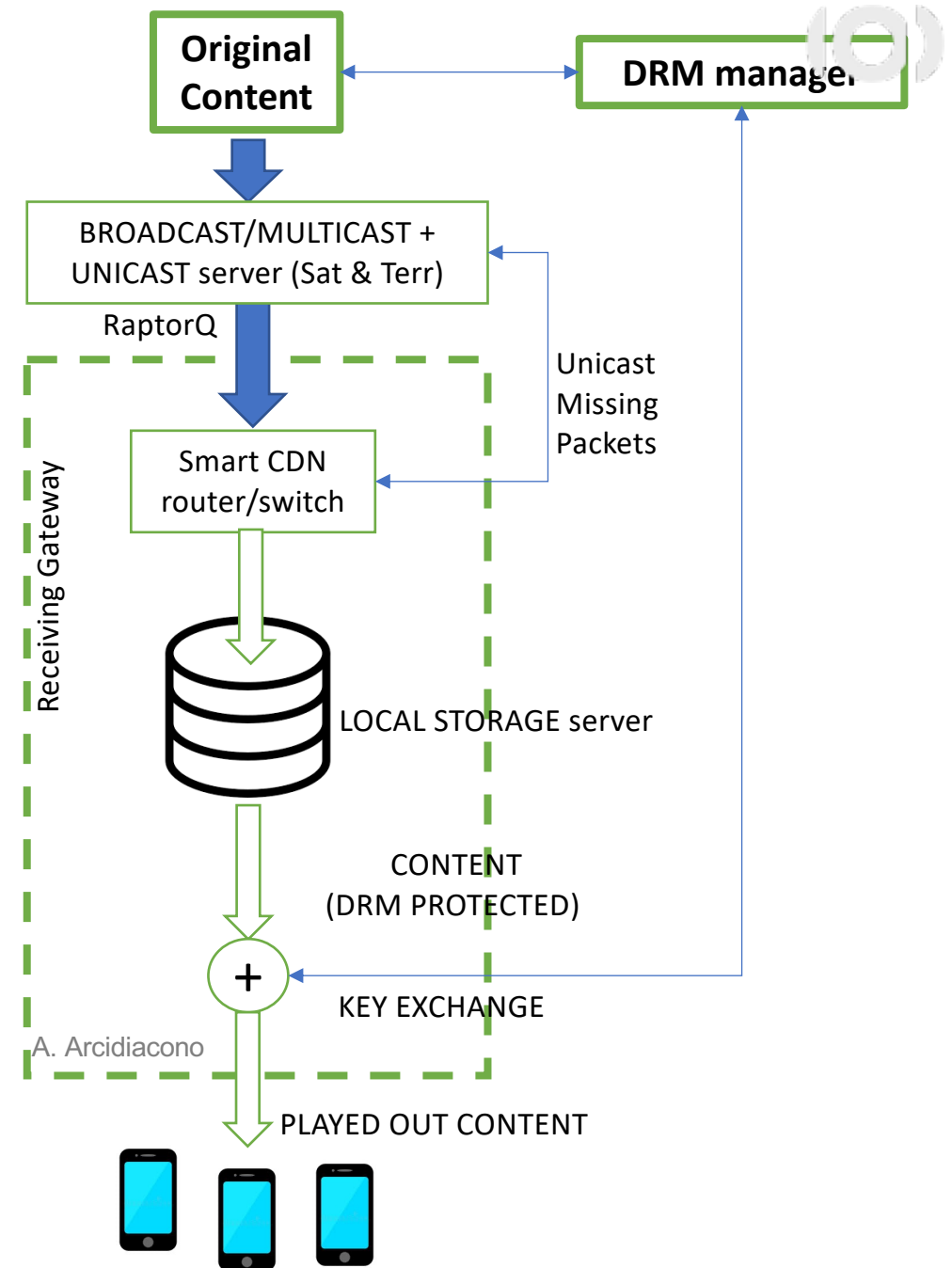
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WEB 3.0 … THE METAVERSE … AND THE LAW OF PHYSICS …

WEB 3.0 AND PSM

- **Attract new generations** to sustain present and future audience

- **Develop social connections** with citizens creating new loyalty instruments

- **Help educate citizens** in this new world

- Building **Communities**

- Reach an **audience beyond national boundaries**

- **Find new sources of financing** to sustain growth

REDUCING THE INFLUENCE OF THE DOMINATING PLATFORMS

- Blockchain technologies (web 3.0) are paving the way to a **decentralized digital ecosystem** where media companies and users can collaborate

- **Users can contribute to** support the media value chain in exchange of **reducing the influence of the dominating platforms,** taking in exchange a substantial cut of media earnings

AGAIN USING THE LAWS OF PHYSICS …

- Today's media distribution is based upon the use of unicast networks to connect end user devices (from Smartphones to Smart TVs, from Game Consoles to Laptops …) and the use of broadcast distribution networks, terrestrial and satellite, delivering content to Radio and TV sets

- The **evolution towards the metaverse** is going to create an acceleration in terms of interactivity and virtualization while at the same time **creating a potential overload** at the level of the servers in the cloud and **at network level**

- The **smart integration of online unicast based infrastructures with native IP broadcast combined with smart edge devices** capable of storing and locally managing advanced AI based functionalities represents the natural solution to sustainably deliver service to millions of people
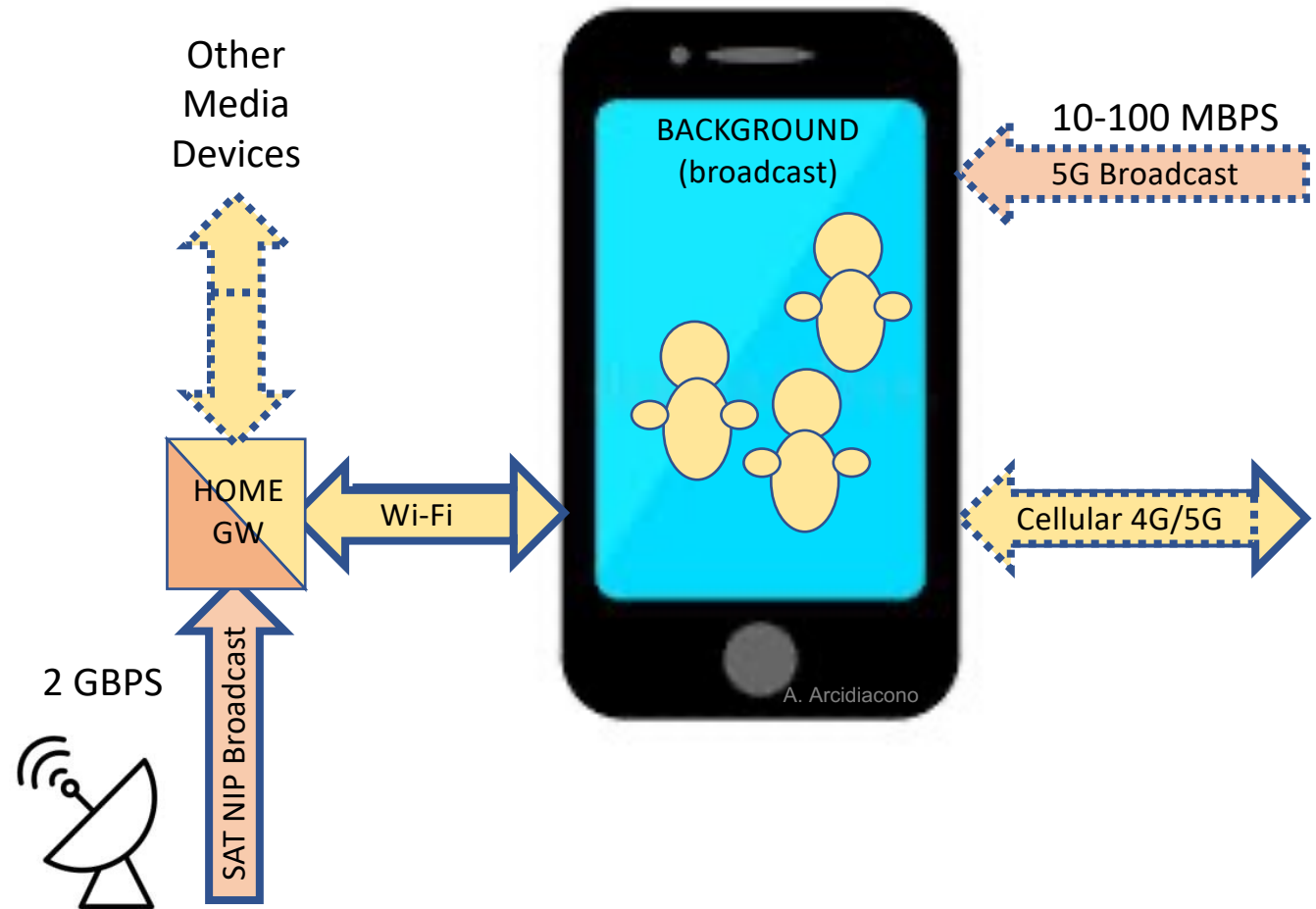
MOBILE METAVERSE – TERRESTRIAL BROADCAST + UNICAST

› Transmitting live background content as well as push multicast content using **5G broadcast** resources

› Using a **local smart cache** to maximize efficiency and economical sustainability

› It is assumed the existence of **a bidirectional link resource for the integration and orchestration of the 5G multilayer approach**

› Unicast traffic will be provided via cellular or via home/office Wi-Fi connection

BACKGROUND
(broadcast)

10-100 MBPS
5G Broadcast

Wi-Fi

Cellular 4G/5G

A. Arcidiacono
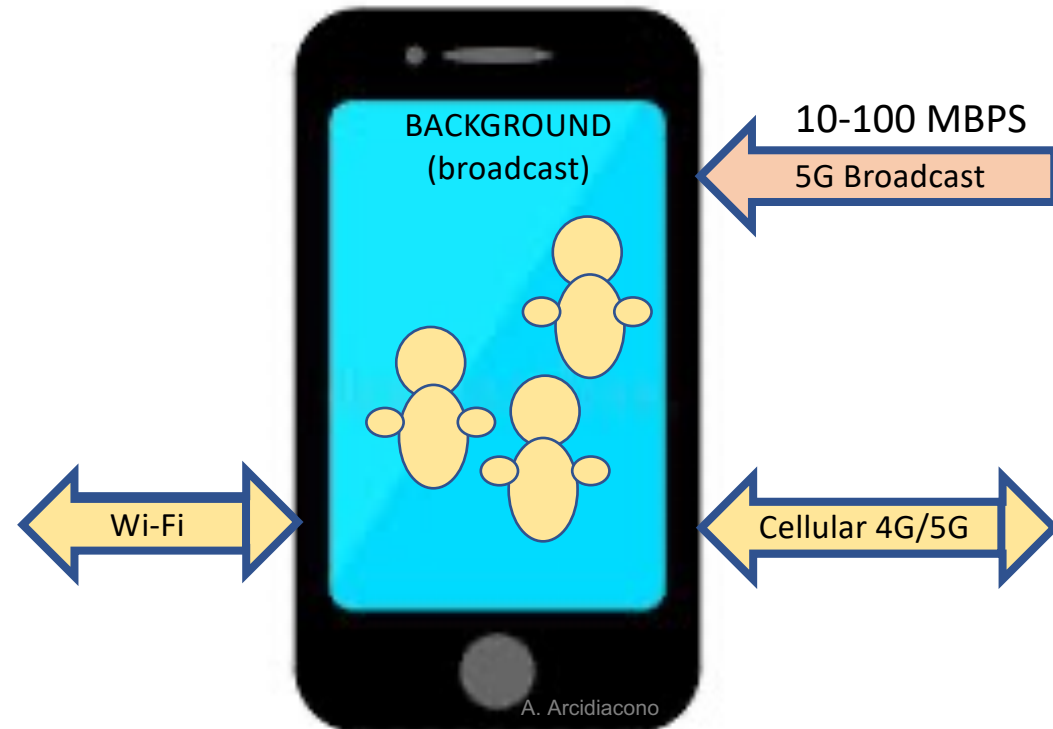
AT HOME METAVERSE – SATELLITE BROADCAST + UNICAST

› Transmitting live background content as well as push multicast content using **Satellite IP broadcast** resources (2 GBPS broadcast direct to home dish)

› Home GW with **local smart cache** to maximize efficiency and economical sustainability

Other Media Devices

BACKGROUND (broadcast)

10-100 MBPS
5G Broadcast

HOME GW

Wi-Fi

Cellular 4G/5G

2 GBPS

SAT NIP Broadcast

A. Arcidiacono

VOLUMETRIC PRODUCTION & WEB 3.0

➢ Delivery full volumetric experience in live broadcasting (2 GBPS) where end user can have a freeview experience optionally combined with individual » visitors »

NETAVERSE: NBA

- The "Netaverse" uses over 100 high-resolution video cameras surrounding the court that help to render a 360 virtual reality experience.
- The visuals are then fed directly into Canon's Free Viewpoint System which then generate realtime, detailed 3D models and images of every player on the court.
- Fans are then able to position themselves anywhere along the sidelines of the court, behind the nets or even in the middle of the court, catching every angle of the game.

Read More on Hypebeast

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