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# Leveraging the O-RAN ecosystem to accelerate NTN deployment

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# | What do we do?

## Operator Infrastructure



Leading operator in **Spanish and Portuguese** speaking markets,

## Multi-orbit provider



**Satellite solutions** with a strong position in **Europe** (Spain and Germany) and **Hispanic America**.

**Space infrastructure**  
GEO Satellites in orbit

13

**Track-record**  
Years in operation

+30

**Member of SpaceRise**  
LEO/MEO Satellites

300

**Focus on Services**  
Revenue associated with the provision of services

>50%

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O-RAN

NTN



Greenfield: The scarce holy grail



NTN = 5G greenfield deployment



D2D and broadband are getting traction



Brownfield: Journey through the desert



Disclaimer: Tiny volumes compared to MNOs

## ORAN Founding rationales

### Incumbent MNOs

Founded by MNOs with the aim of reducing dependency on RAN vendors

### Cloud RAN

Focus on cloudification, moving most of the RAN to Datacenters



## Consequences of these rationales

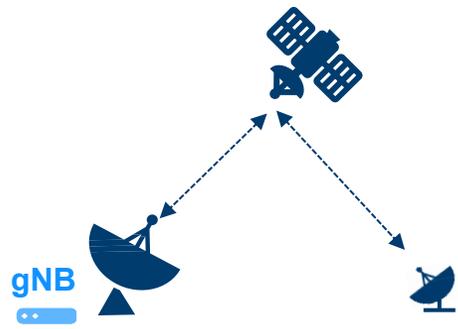
### Fiber to the site

Assuming fiber to the site in most medium & big cities

### Fronthaul (7.2)

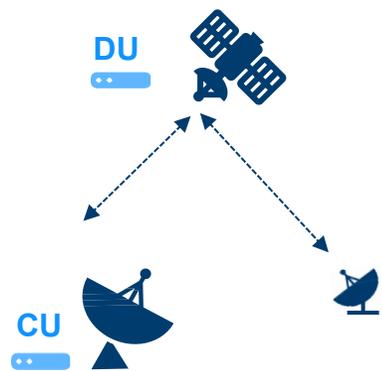
Specs developed with the aim of transferring as much RAN as possible to the cloud

## Transparent



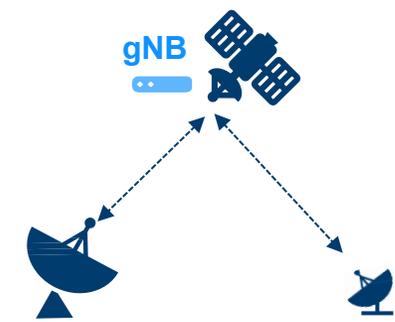
Existing GEO fleet

## Regenerative – split



↓ Consumption    ↑ Capacity

## Regenerative - Full



Data sovereignty

Transparent

Regenerative – split

Regenerative - Full



**CHALLENGE**  
*In case of a regenerative-split architecture, the current front-haul (7.2) is not well suited to a 600km RF channel*



Existing GEO fleet

↓ Consumption    ↑ Capacity

Data sovereignty

## Limited power



Not enough power to illuminate the whole field of view

## Dynamic resource management



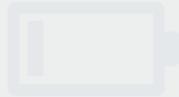
Non-3GPP entity must orchestrate

## RAN Intelligent Controller



RIC framework can help to develop the orchestrator

Limited power



Not enough power to illuminate the whole field of view

Dynamic resource management



Non-3GPP entity must orchestrate

## **OPPORTUNITY**

*RIC functionalities and architecture can be a good basis for the resource manager orchestrator*

ALLIANCE

RIC framework can help to develop the orchestrator

# What does O-RAN bring to NTN?



## ACTIVE ECOSYSTEM

- Good amount of software companies with existing 5G frameworks
- Easy to adapt to 5G NTN



## MULTI-VENDOR STRATEGY

- Specialized companies bringing more innovation
- Focused on different layers of the protocol stack



## GOOD ARCHITECTURAL FRAMEWORK

- Set of specifications complementing 3GPP
- Leveraging RIC architecture to define orchestrator



The Smart Gateway xApp dynamically select and switch between TN and NTN based on real-time network conditions and predefined policies. Ensuring uninterrupted 5G services and consistent QoS

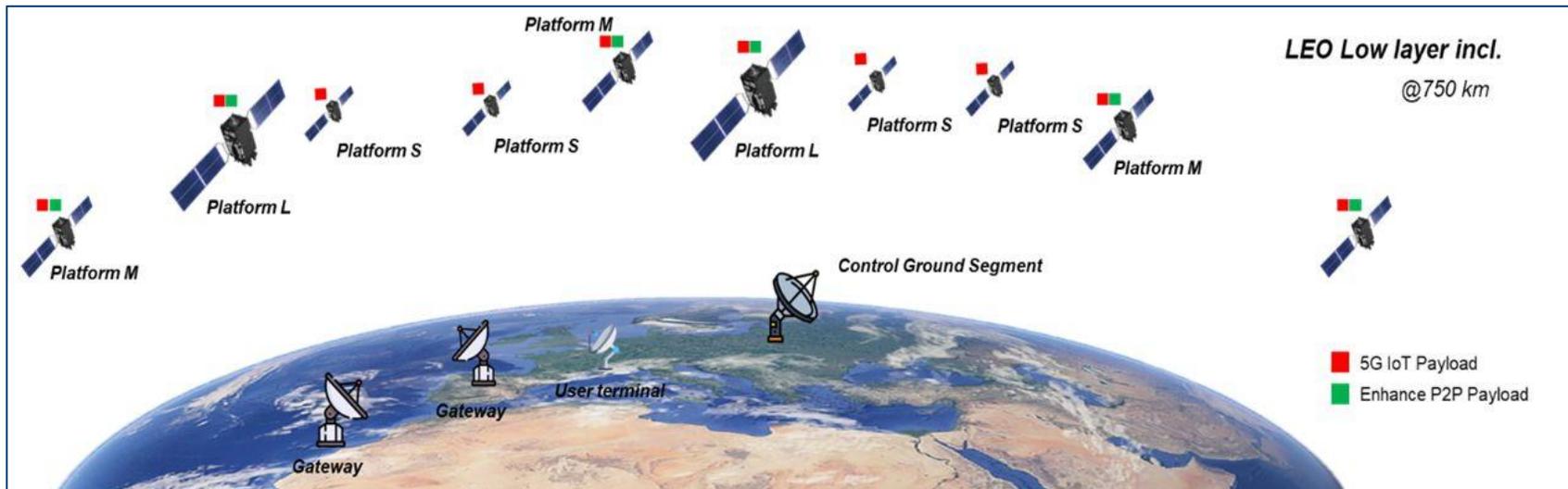
UNITY-6G builds on the principles of the O-RAN to enable an open, disaggregated, and AI-native 6G architecture, where intelligent control and management functions (xApps, rApps, and dApps) dynamically optimize radio, transport, and compute resources.

5G-BRIDGE leverages O-RAN principles to enable an open and disaggregated RAN architecture, where intelligent functions such as dynamic backhaul selection can be implemented through xApps and flexibly controlled in a programmable manner.

# Iris2 Low LEO – A chance for the O-RAN ecosystem

## Main features

-  10 satellites (small, medium, large)
-  < 750 km
-  **D2D, NB-IoT** and Broadband pilot payloads
-  SWaP to embark hosted payload



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