

SPACE FOR METAVERSE

Webinar, 17 September 2025

Roberta Mugellesi Dow - ESA
James Talbot – ESA

Lucy Trang Nguyen – Accedo
Arnie Wiehe – EXIT GAMES GmbH

Before we start...

- Please keep your **microphones muted** at all times and switch off the webcam function
- You can use the **conversation function** anytime to submit your questions. They will be addressed during the Q&A at the end of the webinar

- ESA introduction
- BASS Programme
- ESA 5G/6G HUB
- Kickstart: Space for Metaverse
 - Objectives
 - Value of Space
- External Speakers
 - Lucy Trang Nguyen - Accedo
 - Arne Wiehe – EXIT GAMES GmbH
- How to apply to the Kickstart
- Questions & Answers

EUROPE'S GATEWAY TO SPACE

WHAT

23 Member States

WHY

Exploration and use of space for exclusively peaceful purposes

WHERE

HQ in Paris, 7 sites across Europe and a spaceport in French Guiana

HOW MUCH

€7.68 billion in 2025



ESA BASS (Business Applications & Space Solutions)



Program to support European companies to develop innovative & commercial applications/services in any market sector, using **space asset(s)**

BASS DNA:
Sustainability
User-Driven
Industry competitiveness



<https://business.esa.int/>

Zero equity funding

Always open for businesses from start up to large companies* in any market sector

Focus on close to market services / applications exploiting space technologies (e.g. SatNav, SatCom, SatEO)

User driven, innovative and sustainable services that help companies to be on the market.



WHAT ESA OFFERS



* Companies need to reside in one of the [ESA BASS member states](#), targeted market instead can be anywhere in the world

Kick-start Activity - Background

6 months duration -
Overall cost €80K

€60K ESA funding
(75% ESA co-funding)

Kick-start are ESA's funding scheme enabling companies to undertake short Feasibility Studies that explore new service and application concepts making use of space capabilities. The Kick-start will look at 3 main elements:

1. Engagement with potential users and customers to understand their needs and translate these into service requirements.
2. Assess the technical feasibility of the service, and definition of the service and system architecture.
3. Evaluation of the economic viability of the service and development of a business plan.



ECSAT 5G/6G Hub



ESA SPACE FOR 5G and 6G



Underpins the
Digital Economy

Seamless

Improves
your daily life

EXPAND
5G SPACE

Ubiquitous

Inspires
future generations

Resilient

A WORLD WHERE SPACE ENABLES GLOBAL SEAMLESS
CONNECTIVITY FOR INDUSTRY AND SOCIETY



+ THE EUROPEAN SPACE AGENCY

5G/6G Hub: A Collaborative Space



1500+
visitors

**5G/6G
Engineering Lab**

Direct-to-Device



**5G/6G Terrestrial/
Non-Terrestrial
Networks Applications**

Mobile World Congress 2025



**Showcases
and Demonstrations**



Co-Funded
with Industry

Aligned with UK Government 5G/6G & AI Strategy

- *Digital and Technology Sector Plan*
- *Space Industrial Plan: From ambition to Action*
- *AI Opportunities Action Plan*

10 RUNNING CONTRACTS

ECSAT 5G/6G Hub: Lab Environment

5G Vodafone MPN Terrestrial Network

- Carrier grade
- 1 Gbps aggregate capacity

GEO and LEO Satellite Links

MEC and Edge Compute

AI Computer Vision & Reinforcement Learning

Spatial Computing

- XR (MR/AR/VR)



5G/6G Hub Demonstration Suites



Healthcare



Planetary Health



Moon & Mars

Raise Profile of XR for Industry and Industrial Metaverse
Demonstration of 5G/6G and TN/NTN Use Cases
AI, Energy Sector, Medical, Design, Remote Operation,
Robotics



Industrial Metaverse



First 5G 360 Camera



Real-Time Streaming 360
Video & Audio



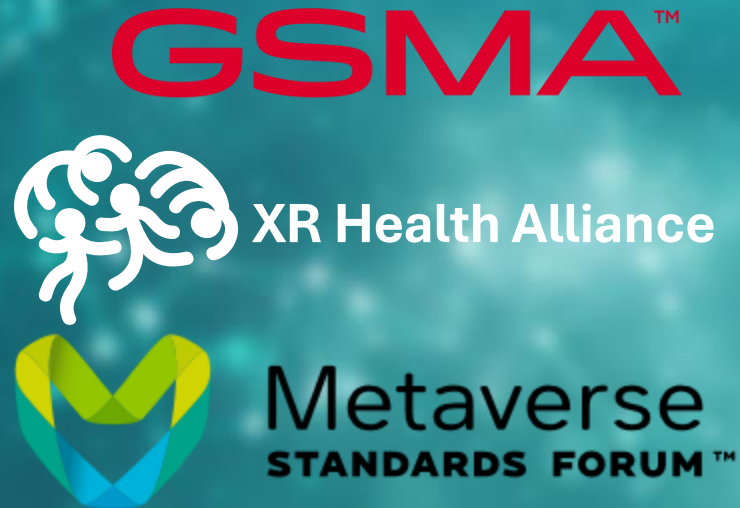
AI-Assisted Screening
LEO / 5G MPN



Standardisation work for XR



NTN for XR White Paper



Funding Calls

Thank you

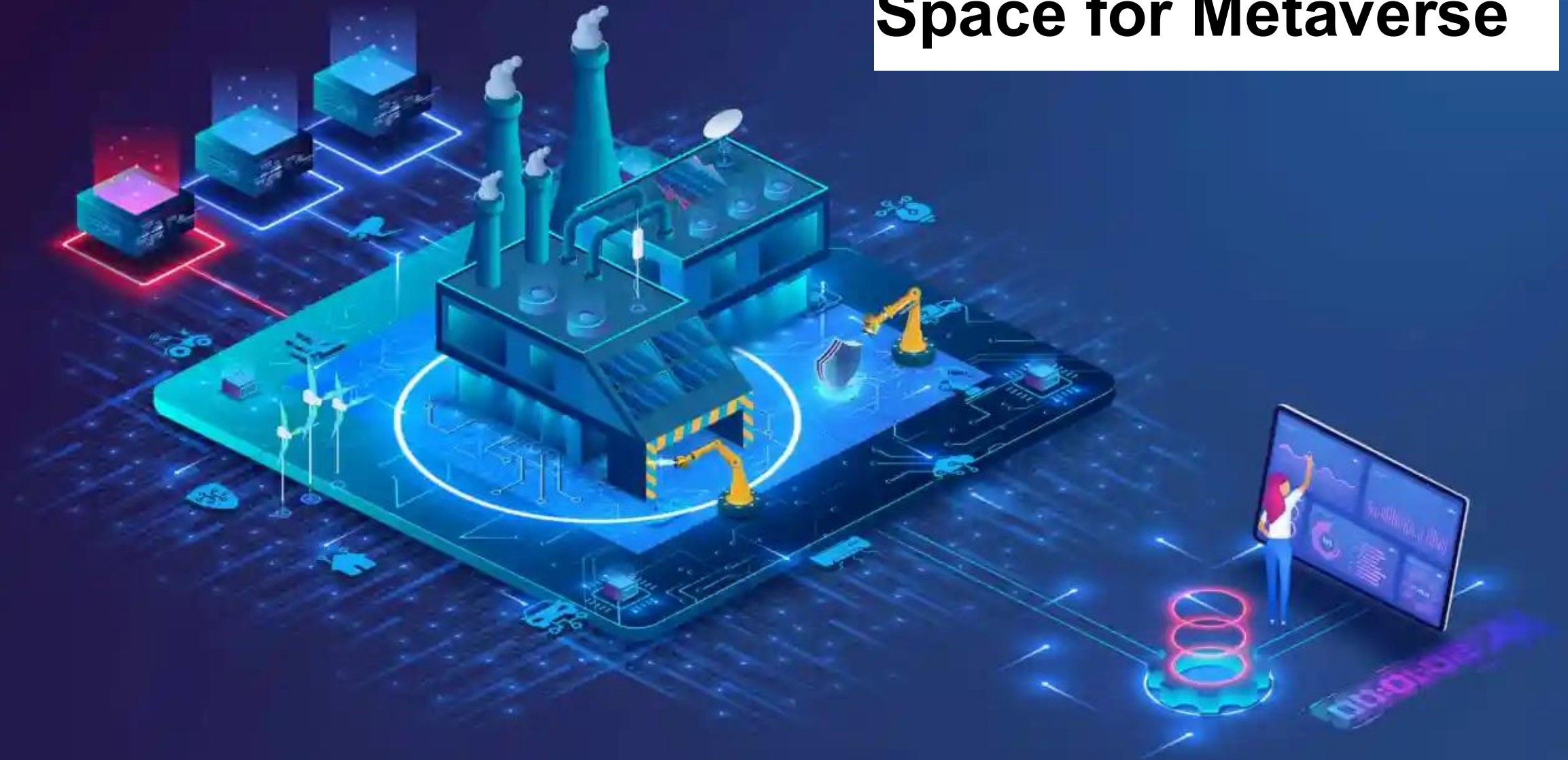
James Talbot
Mixed Reality Developer for 5G/6G and
ARTES Hubs

James.Talbot@esa.int

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Space for Metaverse



Background & Objectives

- Metaverse has triggered the development of several applications appealing both consumers and businesses in different sectors.
- The aim of this Kick-Start is to enable companies to explore the technical feasibility and commercial potential of integrating metaverse elements with space technologies into their existing/new services and applications.
- The call offers an unique opportunity for companies to develop new applications /services addressing topics such as:
 - **Industry and Manufacturing:** Industries can test and optimise their systems, processes and infrastructure and repair facilities remotely.
 - **Training**
 - **Real Estate:** redefining the way we buy, sell, and experience real estate
 - **Travel and Tourism:** inspire people and invite them to visit touristic destinations by exploring virtual replicas of destinations
 - **Civil Security and Law Enforcement:** enhancing situational awareness and preparedness for civil security and law enforcement applications

Call open from 17 September 2025 until 14 November 2025



Satellite Communication (SatCom)



- Satcom can be used to increase network's robustness and resilience. It enables seamless connectivity when terrestrial communications are not available or unreliable.
- Satcom enables data transfer in scenarios involving remote regions in the case of training exercises in a remote factory or offshore plant.

Satellite Earth Observation (SatEO)



- EO images and meteorological data key elements in the construction of the virtual environments, especially of digital twins, required by the metaverse applications.
- GIS enables the representation, analysis, and integration of physical data in map form converting complex geographic and social data into interactive 3D model

Satellite Navigation (SatNav)



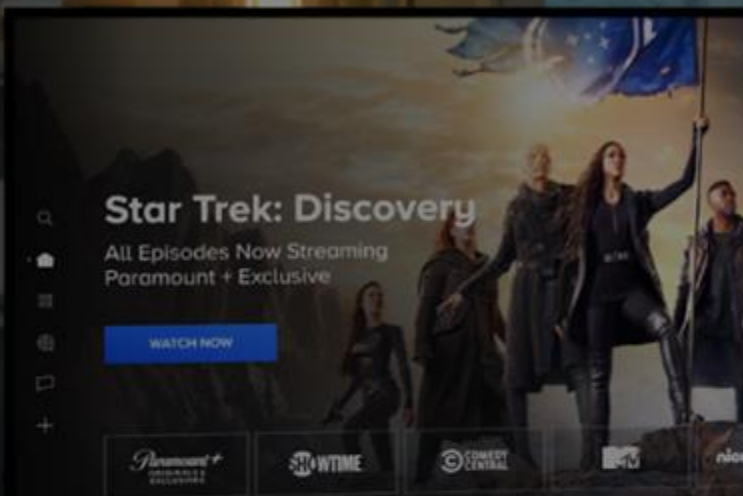
- GNSS technology is instrumental in anchoring user interaction within the metaverse, enabling the mapping of user locations with extreme precision.
- Geofencing by using GNSS or RFID technology creates a virtual geographic boundary contextualizing the user's interaction with the virtual environment
- Satellite Positioning, Navigation and Timing (PNT) are key to providing accurate positioning and to track and trace vehicles and persons.

accedo

Accedo XR Overview

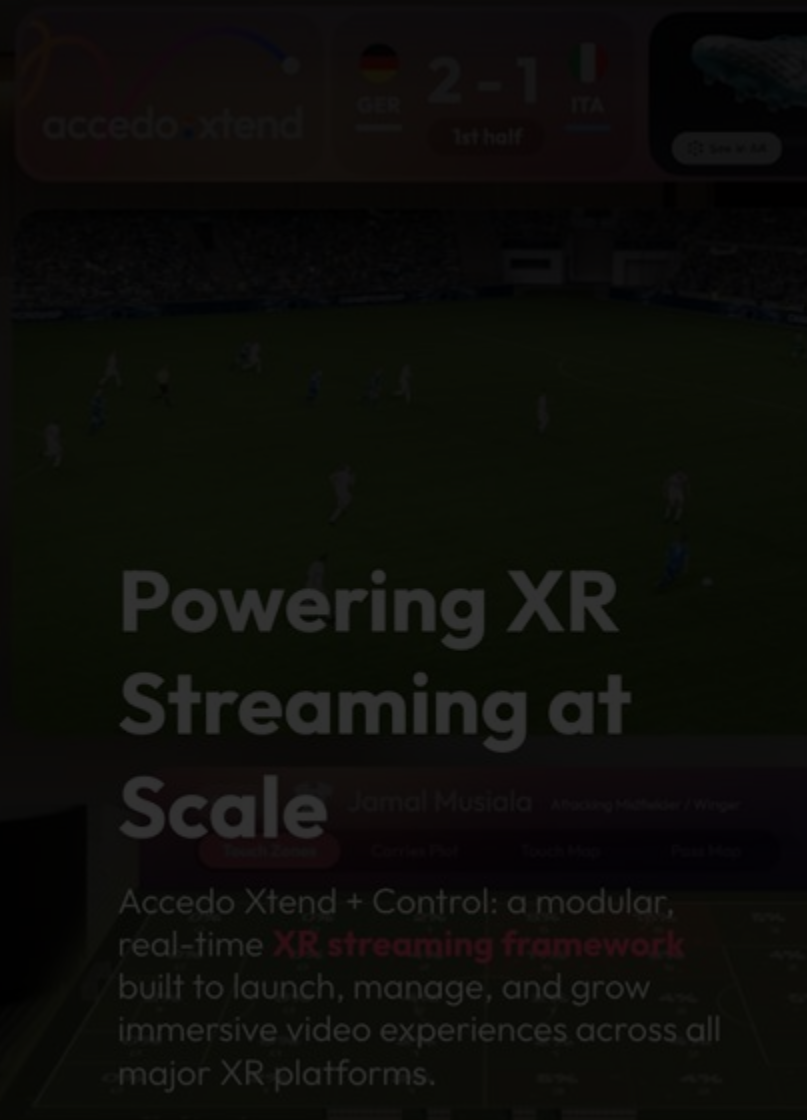
Bringing the video industry to spatial computing

Global | 2025



20 Years of Streaming Expertise

A trusted partner in powering video services for **millions of users globally**—backed by deep expertise across OTT, broadcast, and immersive media.



Powering XR Streaming at Scale

Accedo Xtend + Control: a modular, real-time **XR streaming framework** built to launch, manage, and grow immersive video experiences across all major XR platforms.

Accelerating the Global XR Ecosystem

As a founding member of the **XR Sports Alliance**, we're driving industry collaboration to shape how immersive sports and entertainment are delivered at scale.

accedo:



XR as an extension to existing major platforms.



XR Platforms





Group F

Team Name	GP	W	D	L	P	A	G	P
Germany	4	4	0	0	0	12	2	1
Germany	4	4	0	0	0	12	2	1
Germany	4	4	0	0	0	12	2	1
Germany	4	4	0	0	0	12	2	1

Group F

GER 1:1 SPA
Final

GER 0:0 SPA
Live

GER 1:1 SPA
Final

LIVE

Germany - Spain
Semifinals

Germany's best kits

Euro memorable moments

adidas

See in AR

Visit website

Next games

GER 1:1 SPA
Final

GER 0:0 SPA
Live

GER 1:1 SPA
Final



Traditional Stats



FCB

0 - 3

RBL

Final

Full time





20

Corners

5

Corners



STATS PERFORM

Look to

M. de Ligt 46'

M. Ter 64'

Select a player to create stats graphs.

D. Raum

STATS PERFORM

powered by accedoxte

25




FCB

Final
0 - 3
Full time


RBL







20
Corners



5
Corners



Look to



accedoxtend

Final

FCB **0 - 3** RBL

Full time



AI Sports agent



Amsterdam
Airport Stadium

20

Corners

5

Corners





STATS
PERFORM

Look to unlo



STATS
PERFORM

Select a player to create stats graphs.

M. de Ligt 46'

M. Tuf 64'

D. Upamecano 34'

D. Raum 22'

powered by

accedoxtend

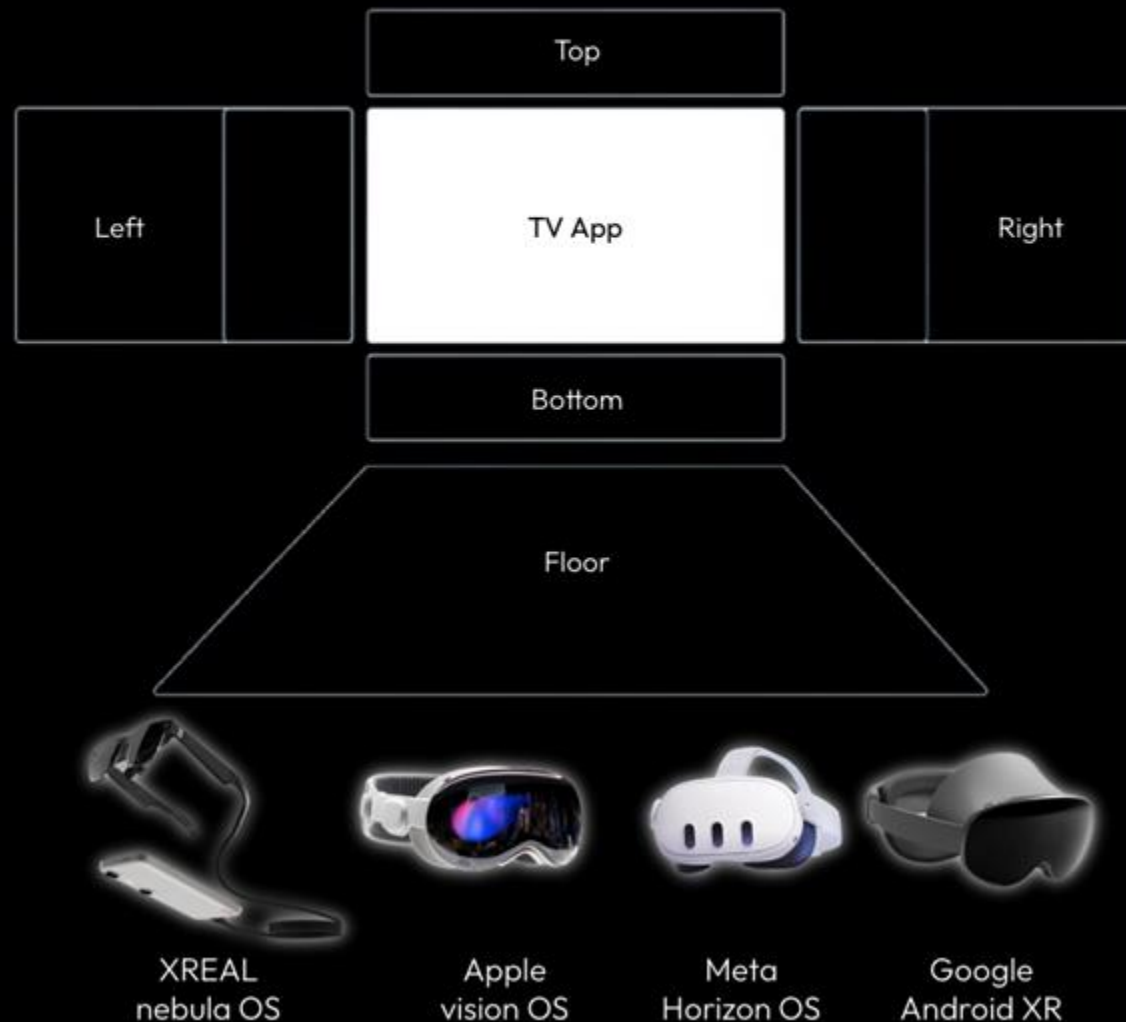
27 Authors by



Modular framework to build and scale XR video streaming applications

Xtend comes with a **ready-to-integrate portfolio of best-in-class XR components**, including immersive cinematic screens, multi-camera and highlight control, conversational AI, spatial data visualizations, immersive advertising formats and more.

- 1 Scalable**
 Standardized UI/UX, real-time configuration, and content management powered by Accedo **control**
- 2 Modular**
 Custom branding and flexible integration with third-party solutions.
- 3 Device-agnostic**
 Build once, deploy across all XR platforms.





**XR SPORTS
ALLIANCE**

Powered by

accedo:

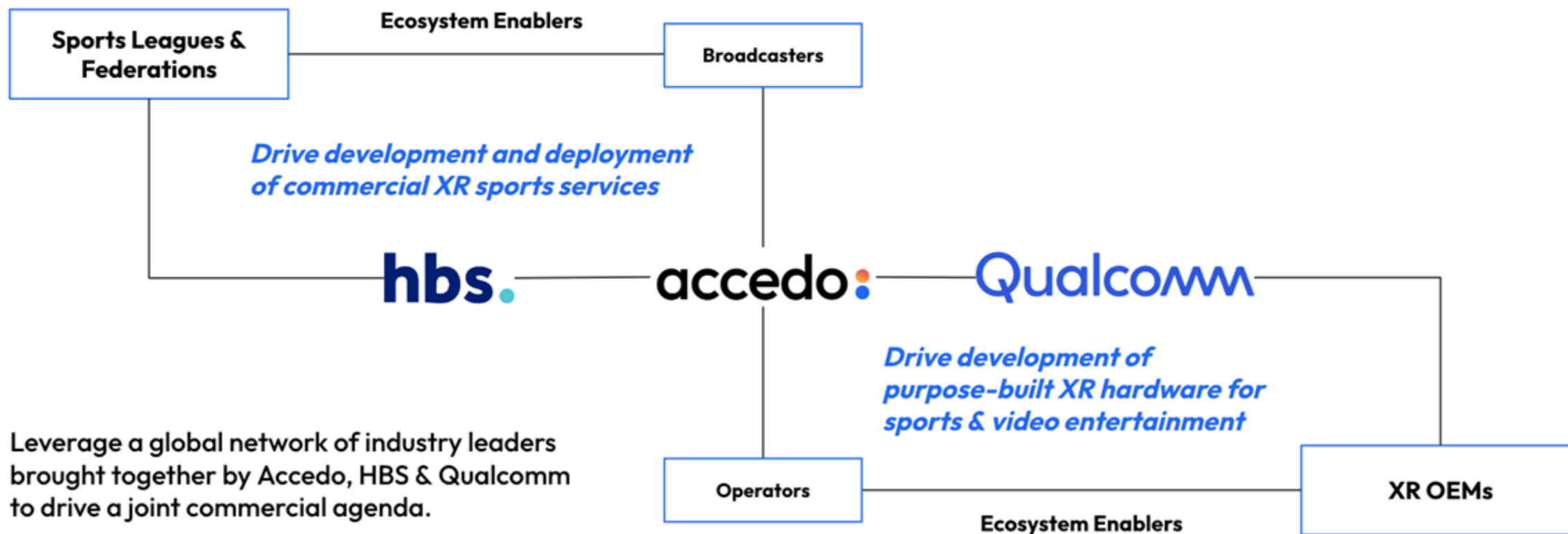
hbs.

Qualcomm

Do it together.
Learn at scale.
Move faster.

— XRSA Mission

Accelerating time-to-market for XR Sports Services





XR SPORTS
ALLIANCE

1st Cohort

accedo: hbs. Qualcomm



XREAL



ATEME

2nd Cohort

T Mobile

Google

Lenovo



STATS
PERFORM

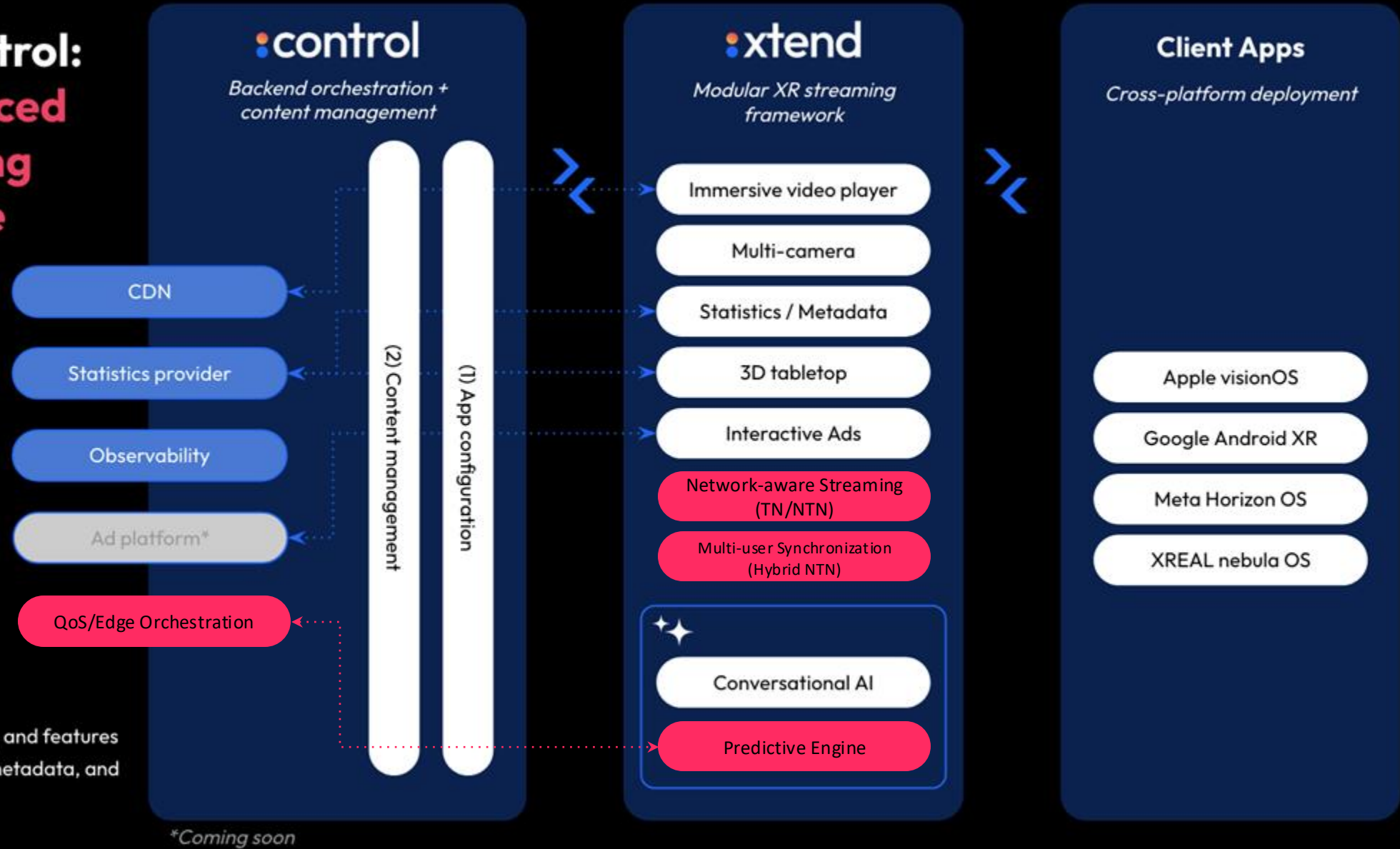


Two Cohorts.
16 Members.

United to
Scale XR Sports
Experiences.

How can **NTN** empower and deliver **seamless immersive experiences** anywhere, anytime?

Xtend + Control: NTN-Enhanced XR Streaming Architecture



(1) Customize UI/UX, layout, and features
(2) Manage media assets, metadata, and feeds, etc.

accedo

Reach out to us!



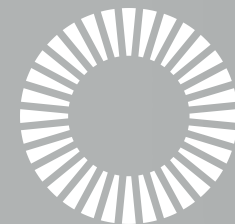
Lucy Trang Nguyen

Director of Strategic Alliances &
Business Development, Emerging Technologies
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XR Remote Maintenance Training for ESA via SatCom



EXIT GAMES GmbH



photon

Photon - Enabling Realtime Collaboration since 2005



Support and Security



Global Infrastructure,
Enterprise-Ready



Built for Every Platform



SDKs That Power Real-
Time Collaboration

German, European Union and International Customers

EXIT GAMES GmbH



Education

IT

Architecture

Automotive

Medical

Healthcare

Security

Metavers

e

Training
Consulting

Engineering
Construction

Creative IND
Experiences

Transport
Space

MedTech

Pharma

Infrastructure
Utilities

Events

FLAIM

Honeywell

Arkio



AUGMEDIT

CWRU

Meta

HOLOLIGHT

KANDA

Arthur One

KLM

BIODIGITAL

FUNDAMENTALVR

equinor

MeetinVR

IMMERSIVE
EDUCATION

KNUD E. HANSEN

DLANX

MDA

MEDIVIS

Laerdal

HATCH

Spatial

luminousxr

REPLY
ROBOVERSE

Flowtropolis



Medtronic

ORamaVR

STREET SMARTS

SURREAL

NC STATE UNIVERSITY

SYNERGYXR

SOLID
WHITE

RENAULT
TRUCKS

Nanome

OSSOVR

TOPPAN

THE GLIMPSE GROUP

NTT DATA

Trimble

XENNIAL

VOLVO

Rayo-seco Systems

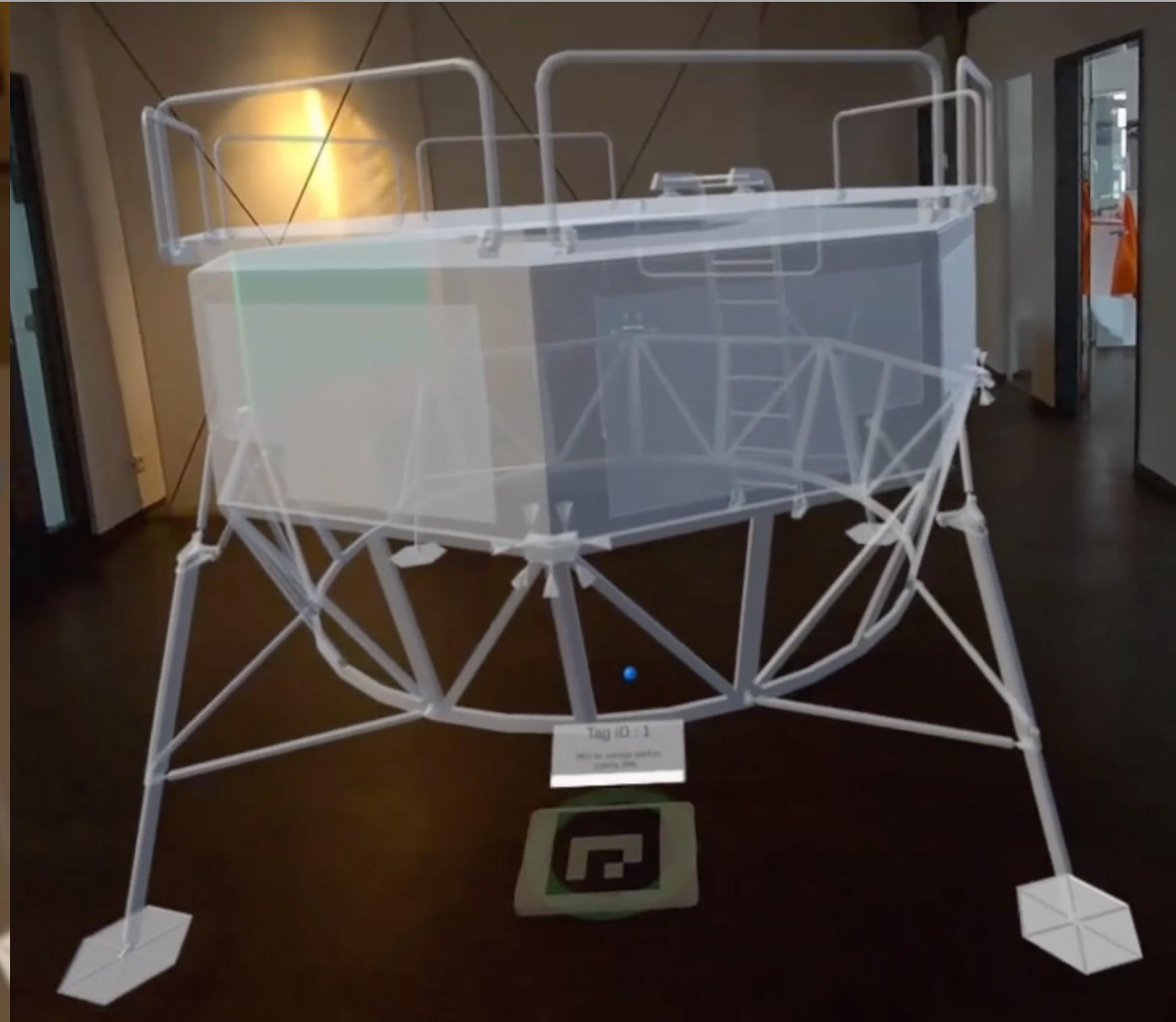
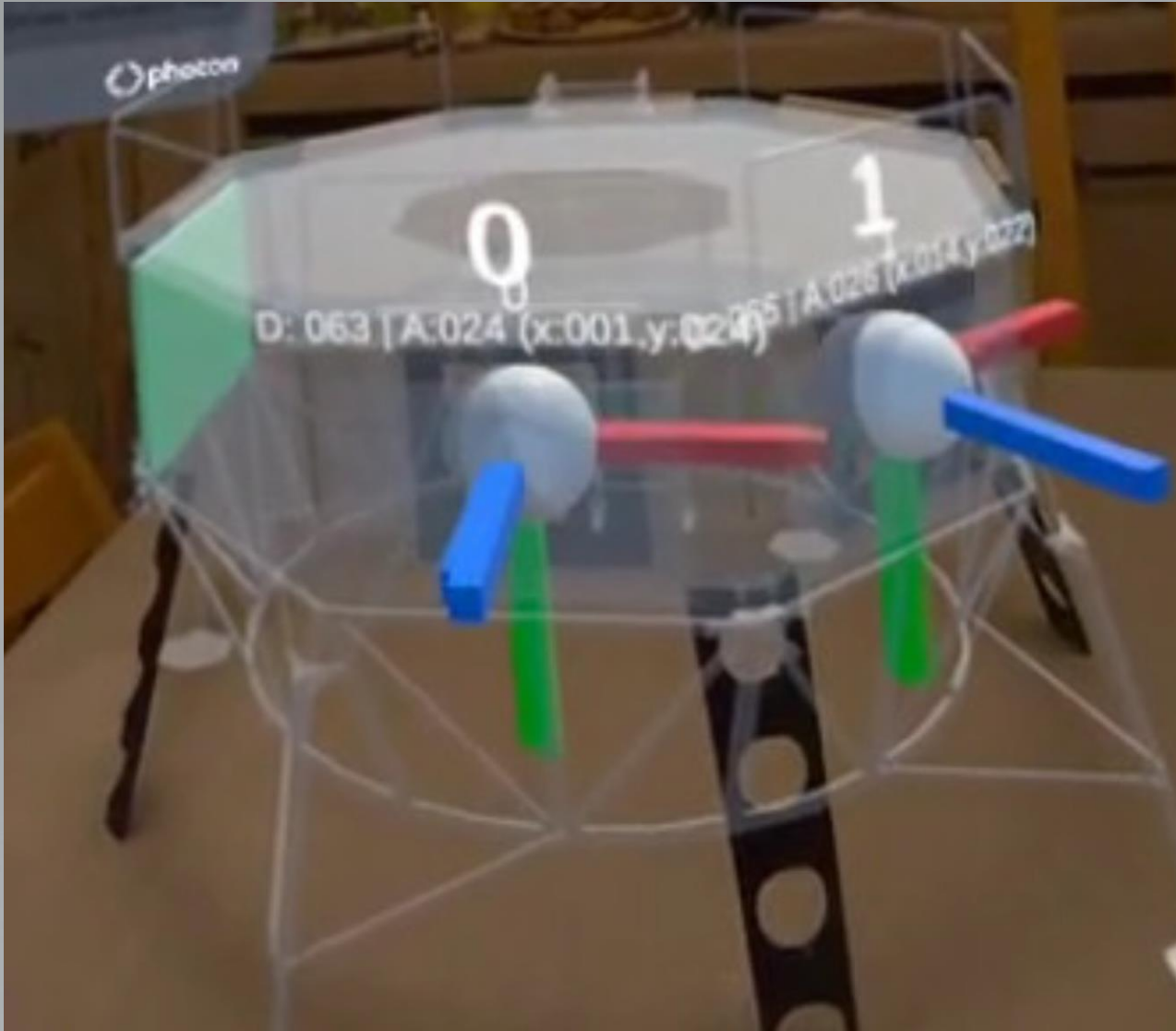
Pfizer

VERTIV

VIVEBUSINESS

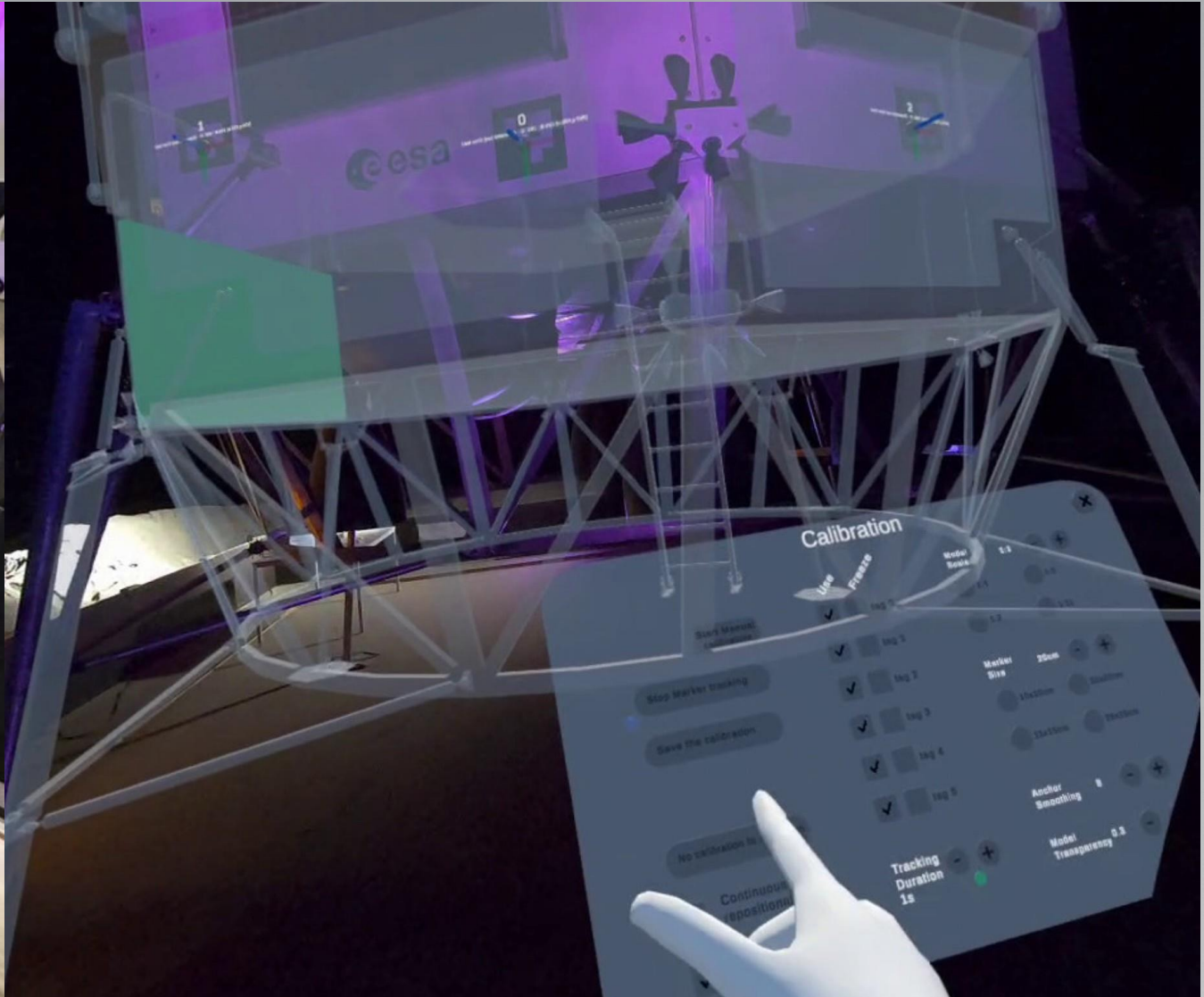
Step1 Digital Twin

EXIT GAMES GmbH

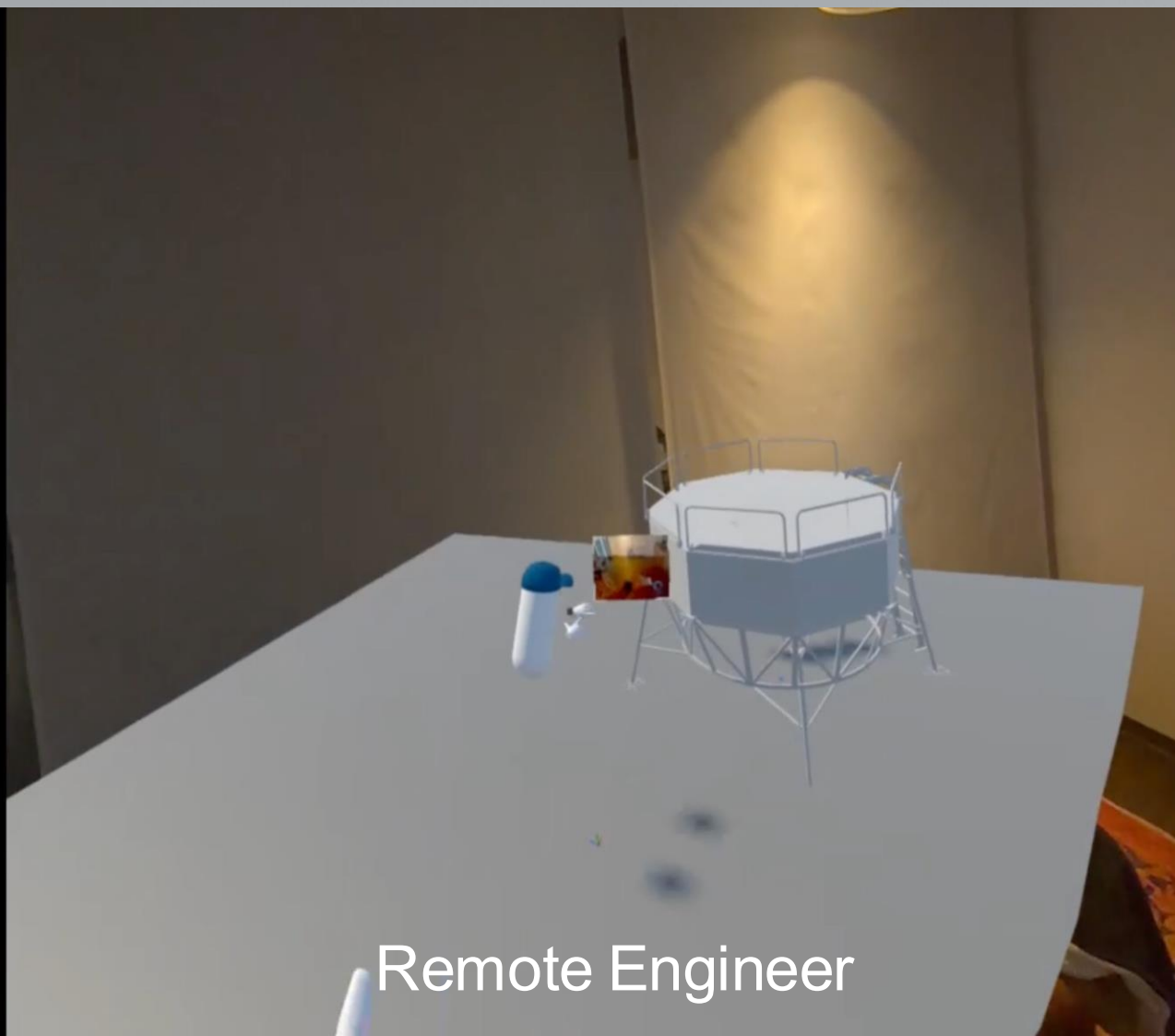
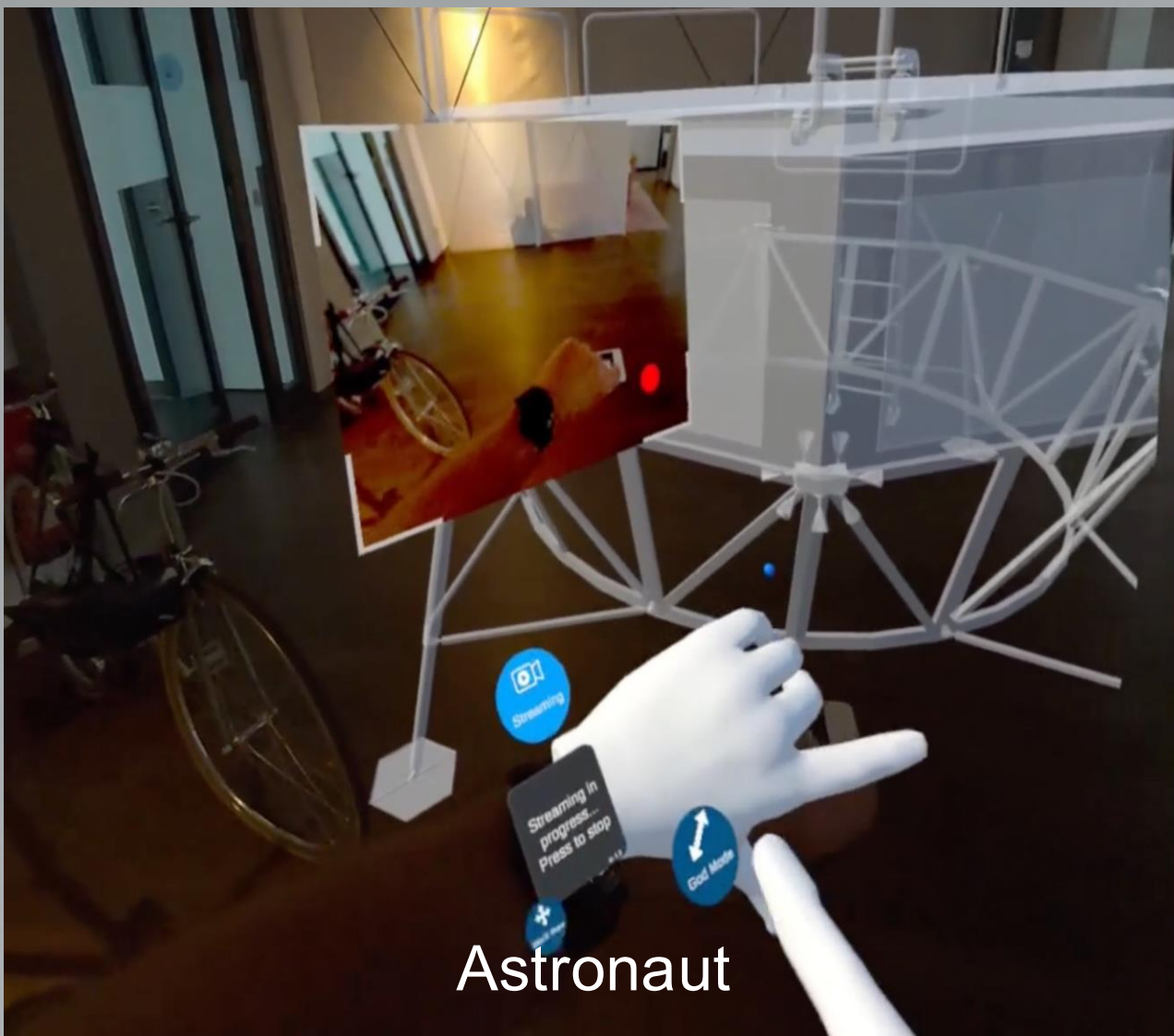


Step2 Digital Twin Position Tracking

EXIT GAMES GmbH

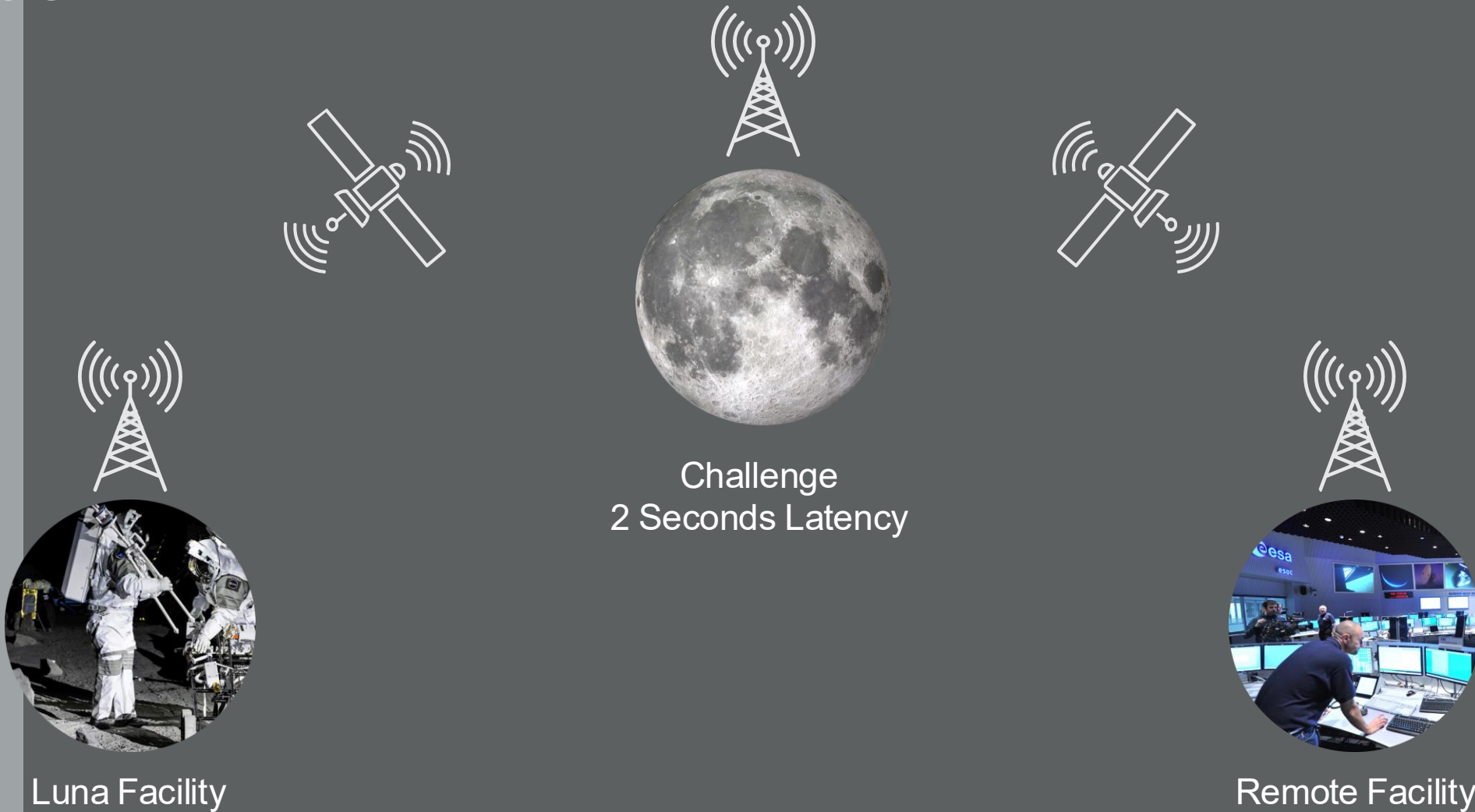


Step3 Digital Twin Co- and Remote Location



Next Steps - POC in Space

EXIT GAMES GmbH



Why photon

EXIT GAMES GmbH

Realtime
Engine
for Space

German
Engineer-
ing

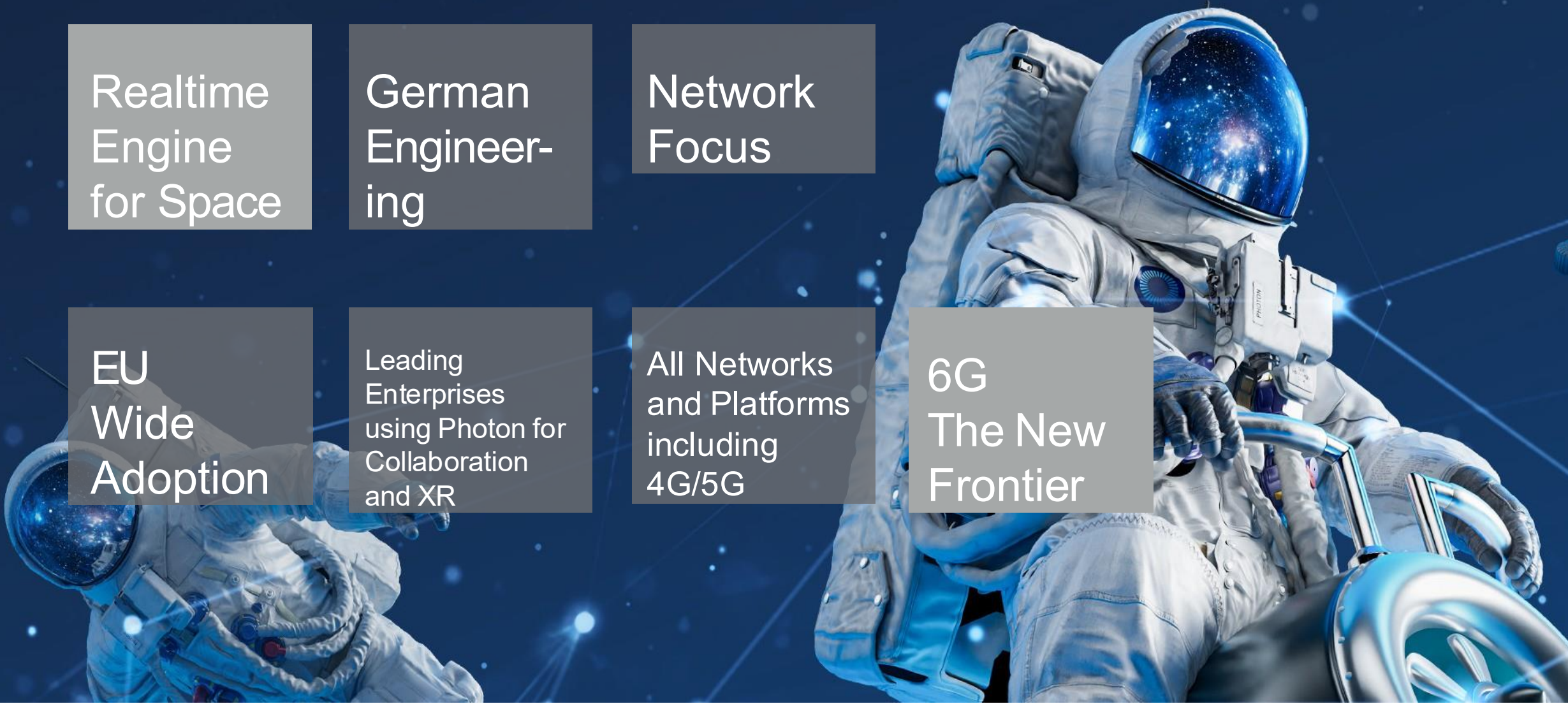
Network
Focus

EU
Wide
Adoption

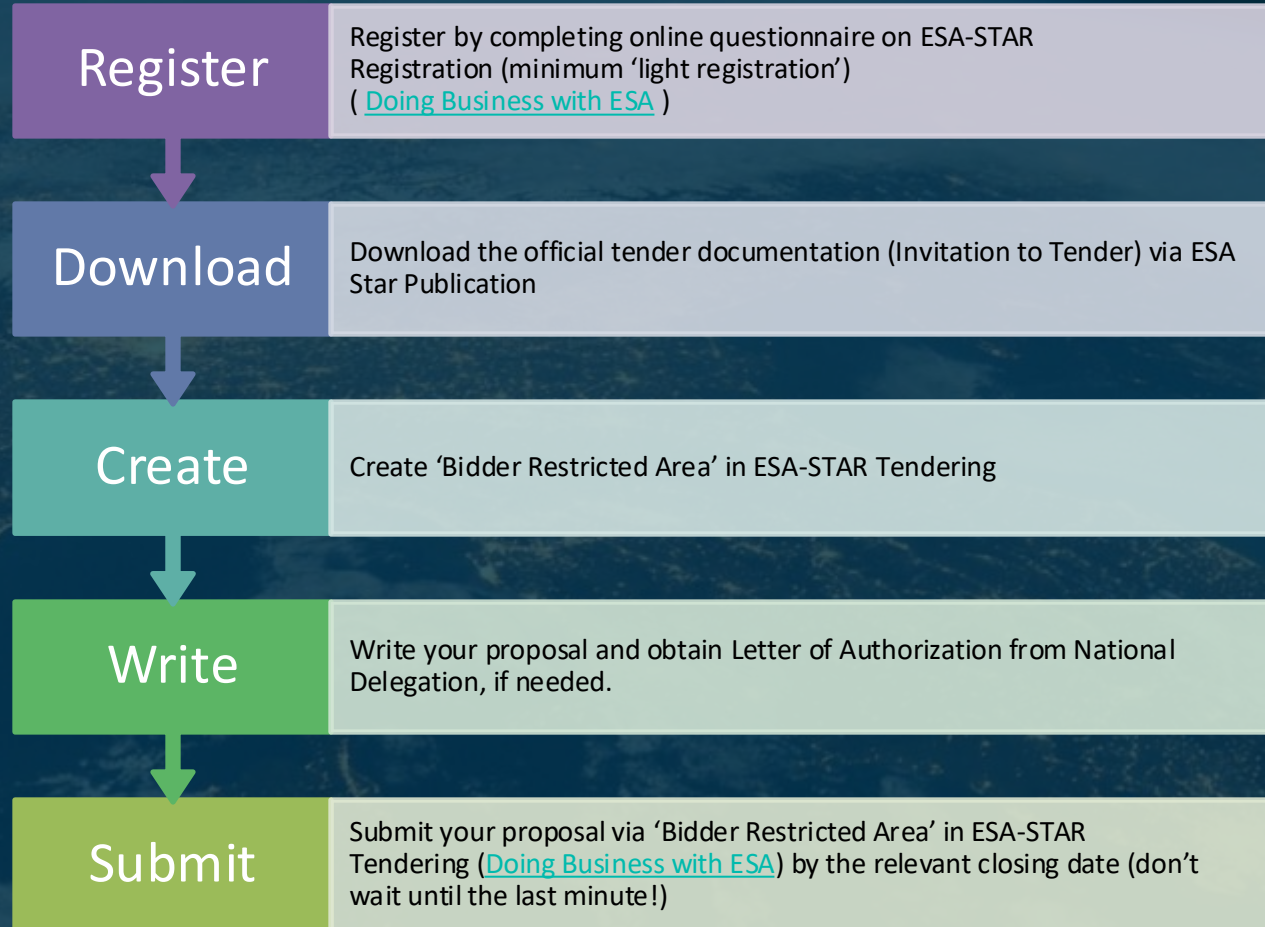
Leading
Enterprises
using Photon for
Collaboration
and XR

All Networks
and Platforms
including
4G/5G

6G
The New
Frontier



HOW TO APPLY, 1/2



Registration (minimum 'light registration') on [ESA-STAR Registration](https://esastar-emr.sso.esa.int) (<https://esastar-emr.sso.esa.int>)

Please note that esa-star allows two levels of entity registration: “Light” and “Full”. This allows new users wishing to do business with ESA to carry out their registration in two steps. A “Light” registration will grant access to all esa-star services up to and including proposal submission. The award of ESA contracts requires “Full” registration.



The screenshot shows the ESA-STAR registration interface. At the top, the ESA logo and 'esa-star registration' text are displayed. Below this is a navigation bar with links: '16 Apr 2020', 'ESA Home Page', 'EMITS', 'ESA Industry Portal', 'Contact Us', and 'Help'. The main content area is titled 'NEW REGISTRATION' and contains a form with the instruction: 'Please select one of the two options:'. There are two radio buttons, each with a question mark icon. The first option is 'A. I am an Entity that has the capacity as "legal entity"'. The second option is 'B. I am a Business Unit acting on behalf of a "legal entity", without being entitled to commit on contracts on my own'. A sidebar on the left contains links: 'Home', 'New Registration', 'Maintain Entity Information', and 'ESA Entities Directory'.

The Letter of Invitation to Call for Proposals is issued on ESA-Star Publication ([Doing Business with ESA](#)) and includes:





- The authorisation from **National Delegation** for the call against which you submit your proposal is an admissibility criterion. Proposals not authorised at the closing date of the Thematic call will not be admitted for evaluation.
- For each individual Thematic Call, dedicated clarifications will be posted in ESA-Star Publication to provide information on the list of Member States that have already provided their pre-authorization to the Thematic Call.
- In case your company/organisation resides in a country which has not provided a pre-authorization to the Thematic Call you are interested in; you need to contact your National Delegation. The contact information of the National Delegations can be found at <https://business.esa.int/national-delegations>.

PROPOSAL TEMPLATE

Your Proposal shall include the following information:

1. Executive Summary (max 1 page)
2. Business Potential (max 5 pages)
3. Technical Concept (max 5 pages)
4. Team and Resources (max 3 pages)
5. Management (max 4 pages)
6. Financials (max 2 pages)



Where to find the information





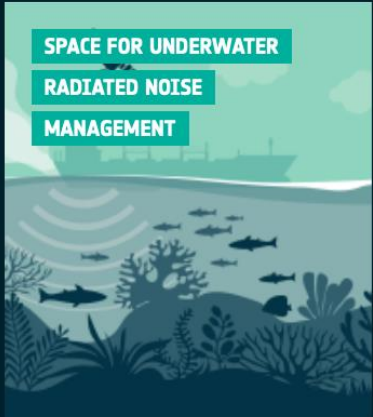
SPACE FOR METAVERSE



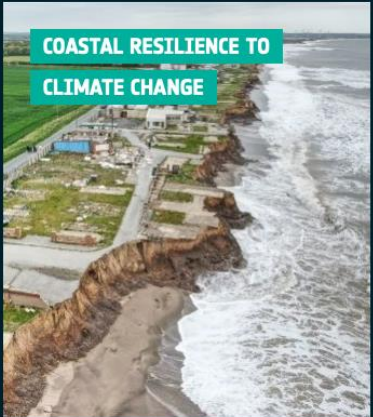
FUTURE OF RETAIL



ENHANCING PORT SAFETY AND EFFICIENCY THROUGH SPACE



SPACE FOR UNDERWATER RADIATED NOISE MANAGEMENT



COASTAL RESILIENCE TO CLIMATE CHANGE



SPACE FOR MONITORING HAZARDOUS MATERIALS



OPPORTUNITY	Call for Proposals (Competitive)
ACTIVITY	Kick-start Activity
OPENING DATE	22-09-2025
CLOSING DATE	14-11-2025
WEBINAR	17 September 2025 - 11:00 CEST

<https://business.esa.int/funding/call-for-proposals-competitive/space-for-metaverse>



Thank you for your attention

ESA Business Applications and Space Solutions <https://business.esa.int/>

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James.Talbot@ext.esa.int