

# VR2Planets

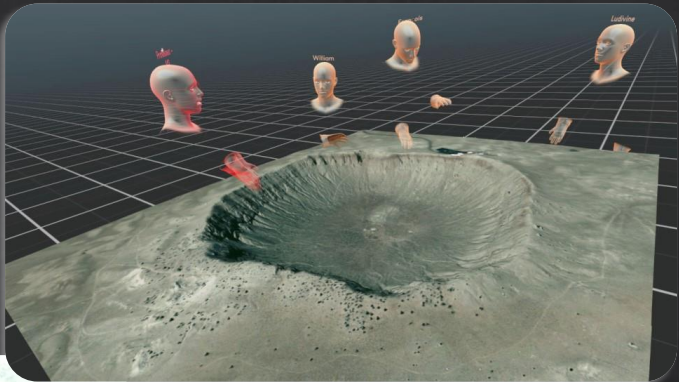
François CIVET, PDG  
[fcivet@vr2planets.com](mailto:fcivet@vr2planets.com)



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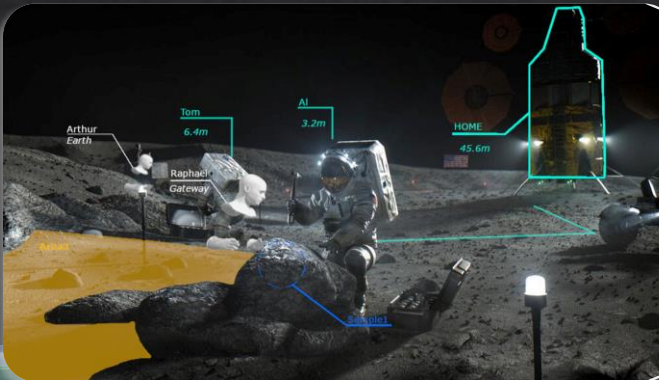
# Usages?

VR



Immersive  
collaboration

AR



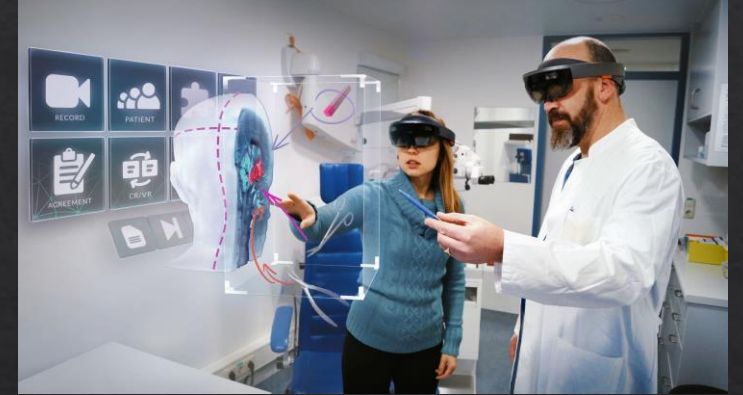




VR2Planets

# Usages?

- Medicine
- Industry
- Space
- Defense
- Pedagogy



# La formation en Réalité Virtuelle



Multiplication

Répétition

Partage



APPRENTISSAGE

- ◇ Une expérience sensorielle
- ◇ Une mémorisation renforcée
- ◇ Une restitution améliorée





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# Onsight



# Onsight?

Did it works?

✓ YES

The community adopt it?

▪ NO

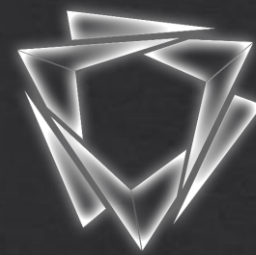
What happened?

- Network management complexity
- Small FOV
- Resistance to change
- Works only inside

→ HW issues



# La géologie virtuelle en France



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Site web SGF

<https://www.geosoc.fr/geologie-virtuelle.html>

# Data Source for virtual environments

## 3D models

### Insérer une page web

Cette application vous permet d'insérer des pages web sécurisées commençant par <https://> dans l'ensemble de diapositives. Pour des raisons de sécurité, les pages web non sécurisés ne sont pas prises en charge.

Veuillez entrer l'URL ci-dessous.

[https:// planet3d.vr2planets.com/viewer/6?password=PM2](https://planet3d.vr2planets.com/viewer/6?password=PM2)

Aperçu

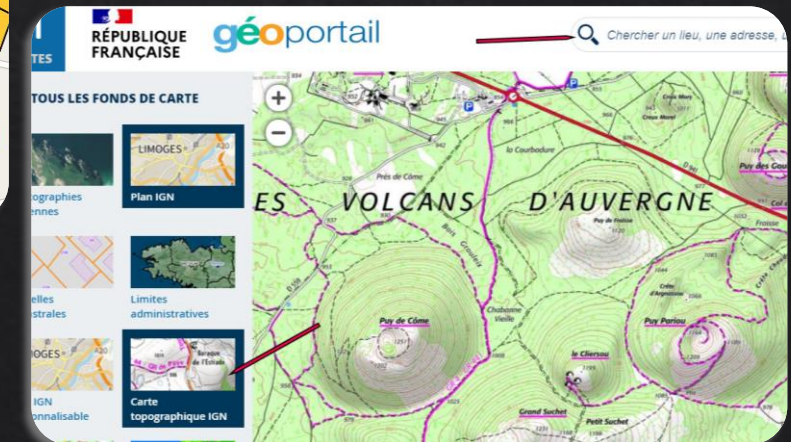
Visionneuse web [Conditions](#) |  
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## Georeferenced content



## Web services

Photogrammetry multi images  
= mesh

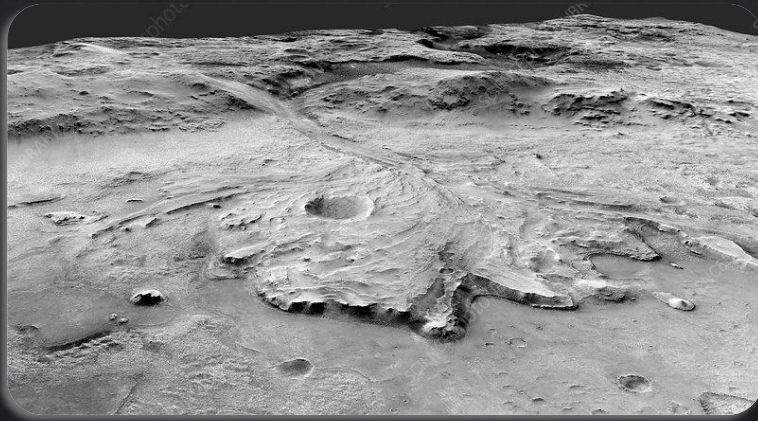




# Data Source for virtual environments

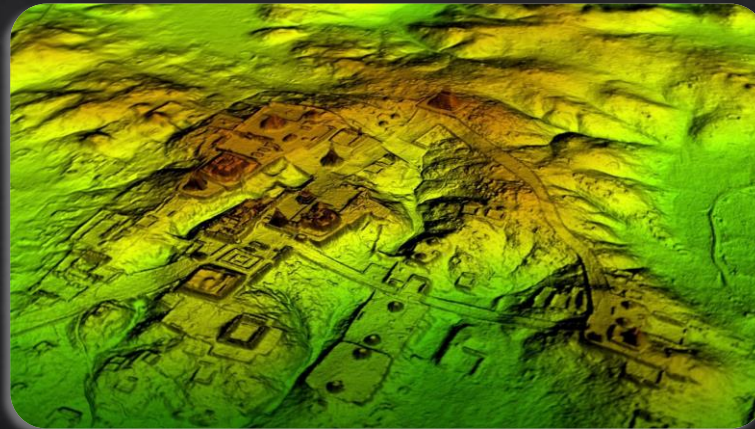
## Satellite

Stereophotogrammetry  
Interferometry RADAR  
= **DTM/orthoimages**



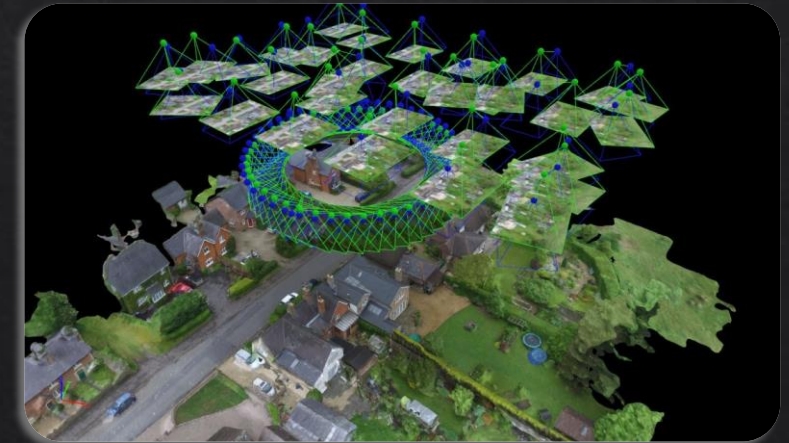
## LIDAR

Aeroported  
On ground stations  
= **point clouds**



## Images

Photogrammetry multi images  
= **mesh**



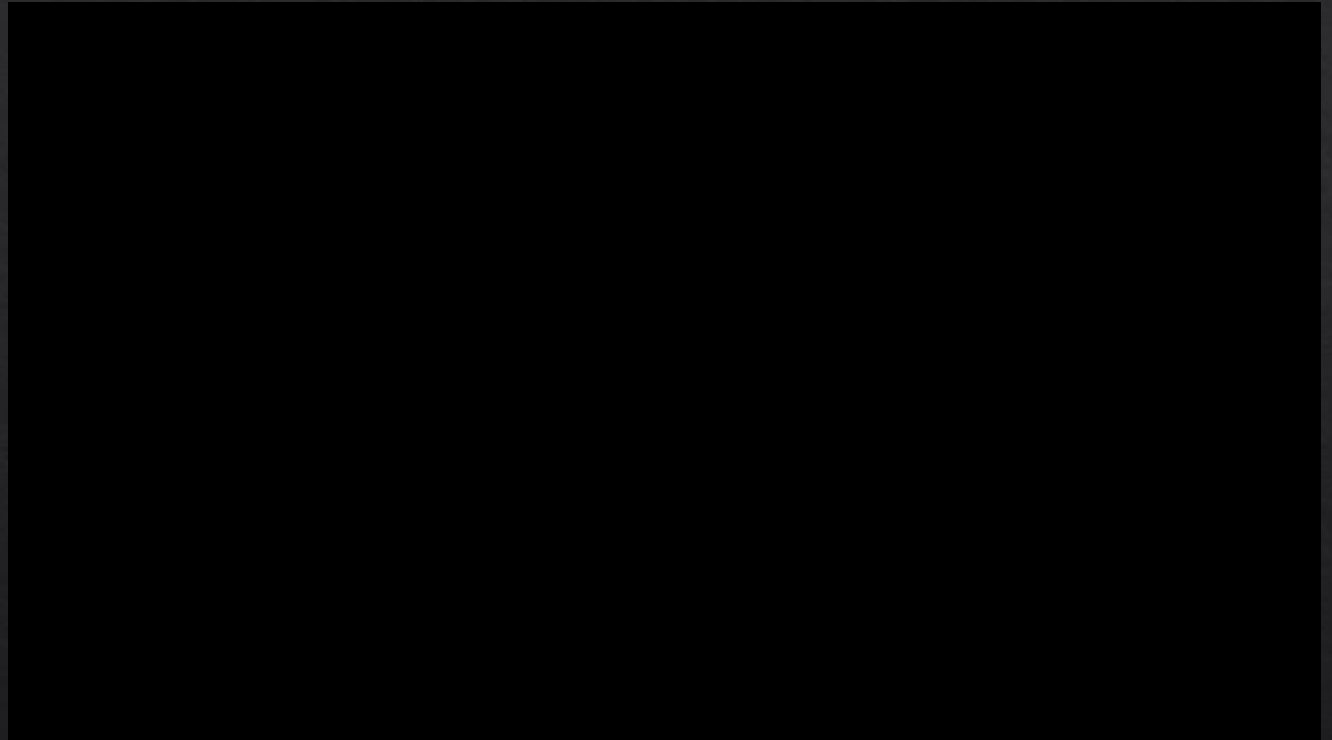
# Skills and products

## ◆ Our skills

- ◆ Creation of virtual environment
- ◆ Processing of imagery data from orbit to ground
- ◆ No size nor resolution limit
- ◆ Georeferencing
- ◆ Multi resolution
- ◆ Collaborative sessions
- ◆ Interface with of SPICE kernels
- ◆ High fidelity modelling and rendering of S/C
- ◆ Interactivity of instruments 3D models
- ◆ Integration of real data of instruments

## ◆ Our products

- ◆ 3D and VR immersive applications
- ◆ 2D Interactive applications
- ◆ Videos
- ◆ Images







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# Skills and products

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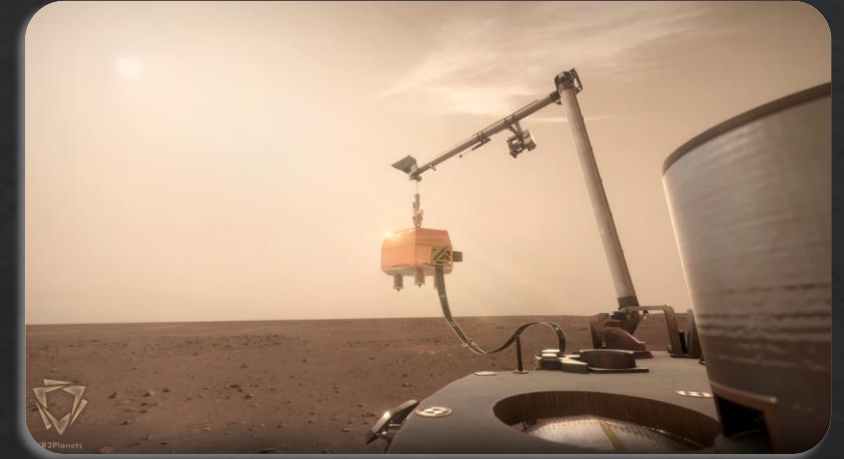
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- ◆ Images



# Produits VR2Planets

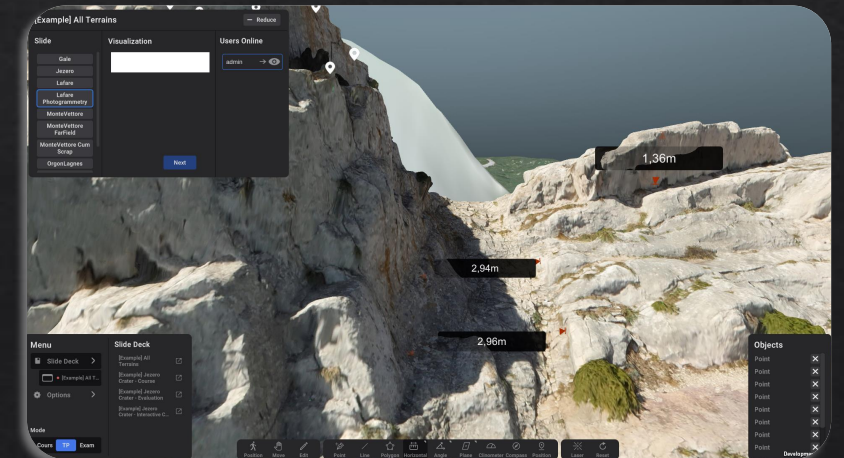
## ◆ Développements sur-mesure

- ◆ Création de contenu 3D/VR à partir des données de l'exploration spatiale
- ◆ Communication et valorisation scientifique
- ◆ Pour Laboratoires de recherche, Agences spatiales



## ◆ Licence VRExplorer - SaaS

- ◆ Logiciel éditable de création de scènes 3D/VR collaboratives
- ◆ Pédagogie des géosciences
- ◆ Cibles
  1. Pour Écoles, Universités
  2. BTP, industrie minière et pétrolière







# ERASMUS Mundus

## GeoPlanet Erasmus + Strategic Partnership project for higher education (KA203) - 2020-2023



Co-funded by the  
Erasmus+ Programme  
of the European Union

### Context

The spectacular progress of space exploration during the last 30 years has allowed the development of Planetary Geosciences, characterised by an increasing involvement at the international level, of specialists of the Earth (geologists, geophysicists, geochemists) in understanding evolutionary processes of other planets. Planetary Geosciences is an interdisciplinary approach combining expertises in observation, experimentation and modelling.

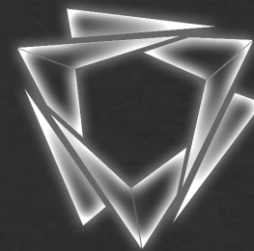
The beginning of the 21st century has been marked by the development of ambitious space exploration programmes by new actors such as India and China. In this competitive context the GPN-SP project addresses the needs of structuring and internationalise the HE training in Planetary Geoscience in EHEA, strengthening excellence, increasing cooperation with industry and proposing a complementarity of fields. Indeed, Masters in Astrophysics and Astronomy, in Planetary Geology and in Planetary and Earth Sciences exist in EHEA but there is currently almost no offer in education which federates all these fields and proposes a combined expertise in research in planetary geosciences.

Source: <https://geoplanet-sp.eu/>

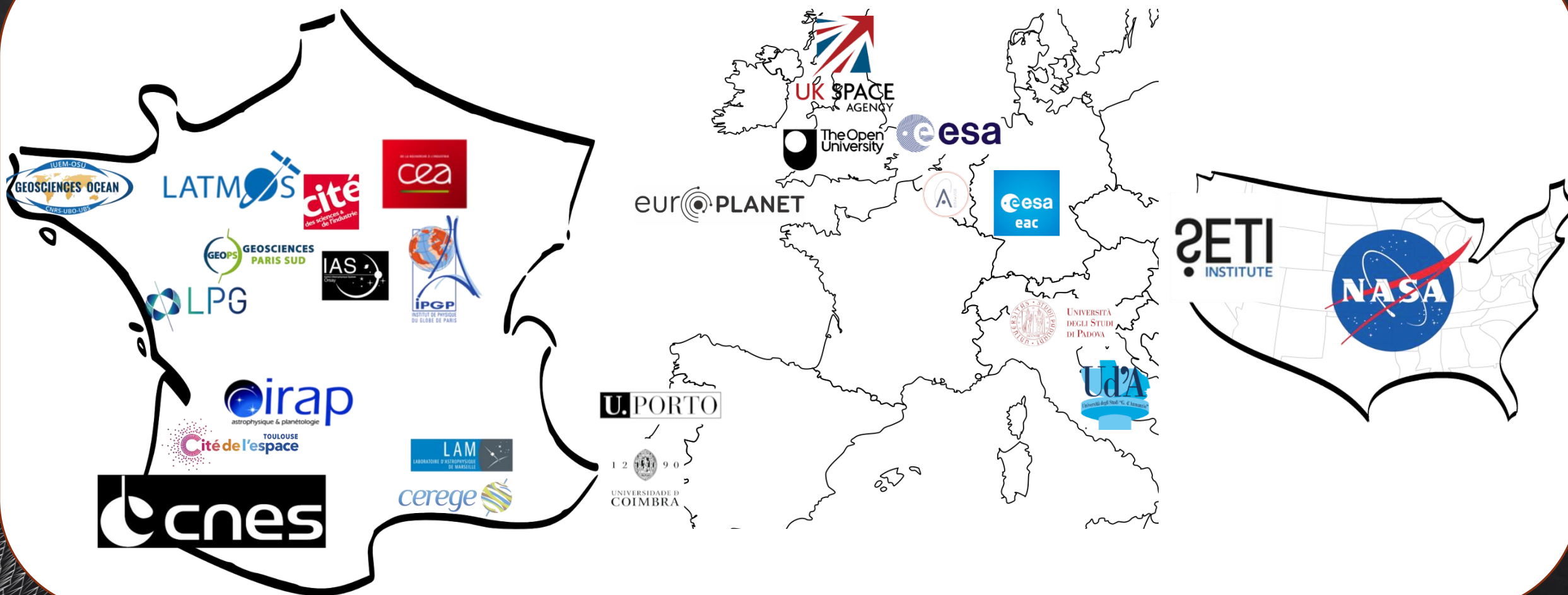
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Modifier

# Nos utilisateurs et partenaires



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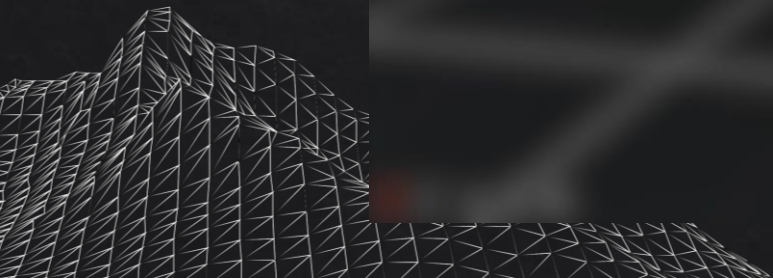
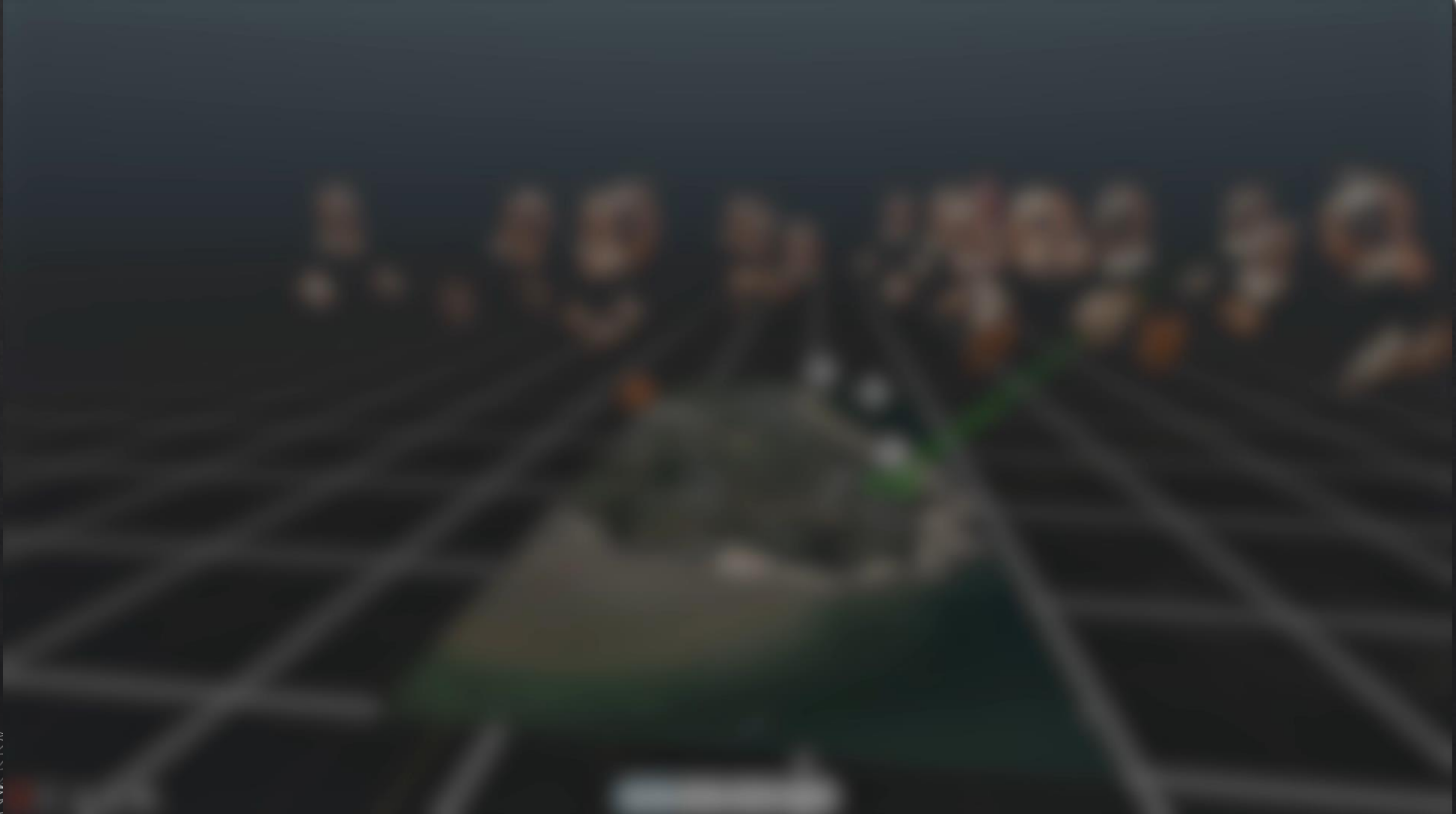




# VRExplorer



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# Workflow



Slide

Gale

Jezero

Lafare

Lafare  
Photogrammetry

MonteVettore

Visualization



Users Online

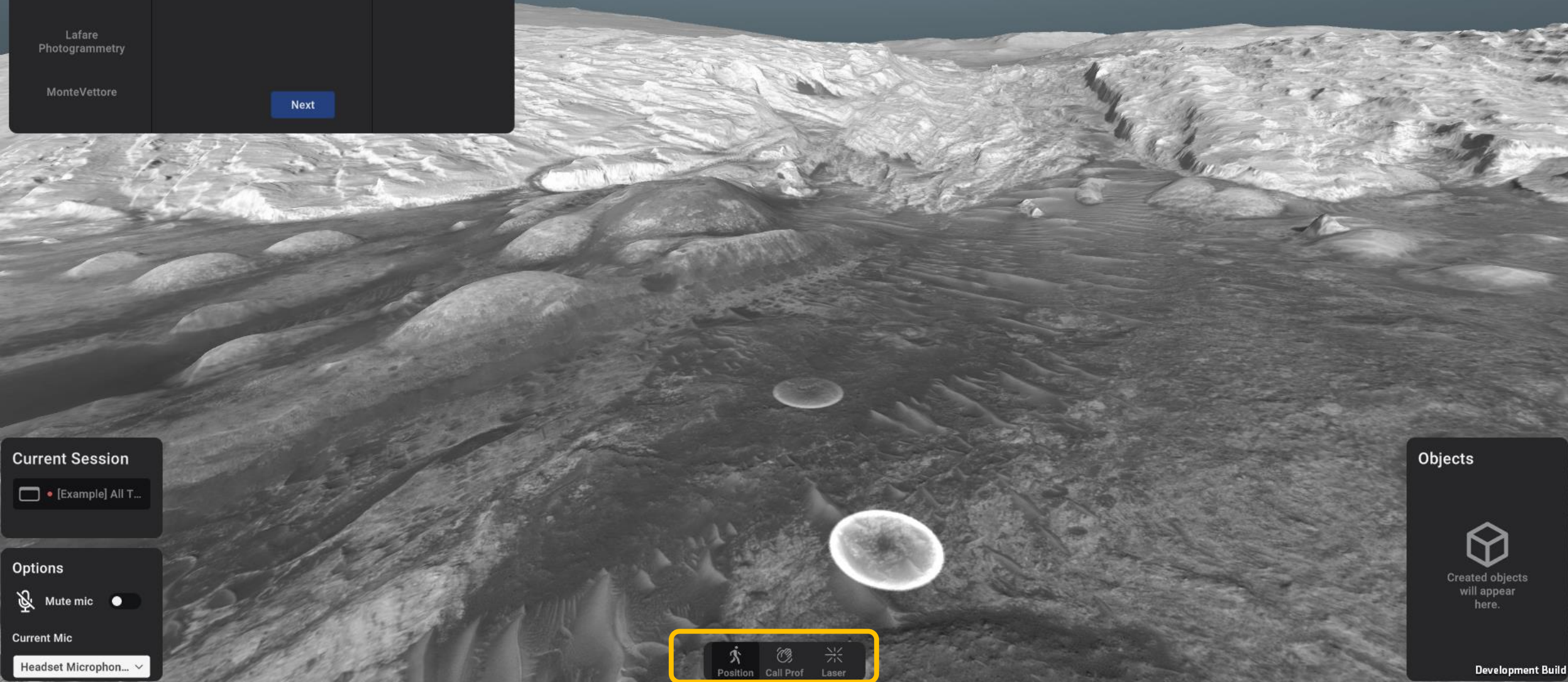
françois

Next




VR/3D client software

- Visualize virtual scenes
- Ease sharing online information in the virtual world
- Allow assessment session in VR



Current Session

 • [Example] All T...

Options



Mute mic



Current Mic

Headset Microphon... ▾



Position



Call Prof



Laser

Objects



Created objects  
will appear  
here.



Slide

- Lafare  
Photogrammetry
- MonteVettore
- MonteVettore  
FarField
- MonteVettore Cum  
Scrap
- OrgonLagnes
- Lagnes
- FalaiseBeauregard
- Copy of Jezero

Visualization



Users Online

admin → 👁

Next



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Menu

- Slide Deck >
- [Example] All T...
- Options >

Slide Deck

- [Example] All  
Terrains
- [Example] Jezero  
Crater - Course
- [Example] Jezero  
Crater - Evaluation
- [Example] Jezero  
Crater - Interactive C...

Mode

Cours TP Exam

Objects



Created objects  
will appear  
here.







Introduction

Origine du nom

Géographie et géologie

slides

Activity

Objects

Options

Screenshots

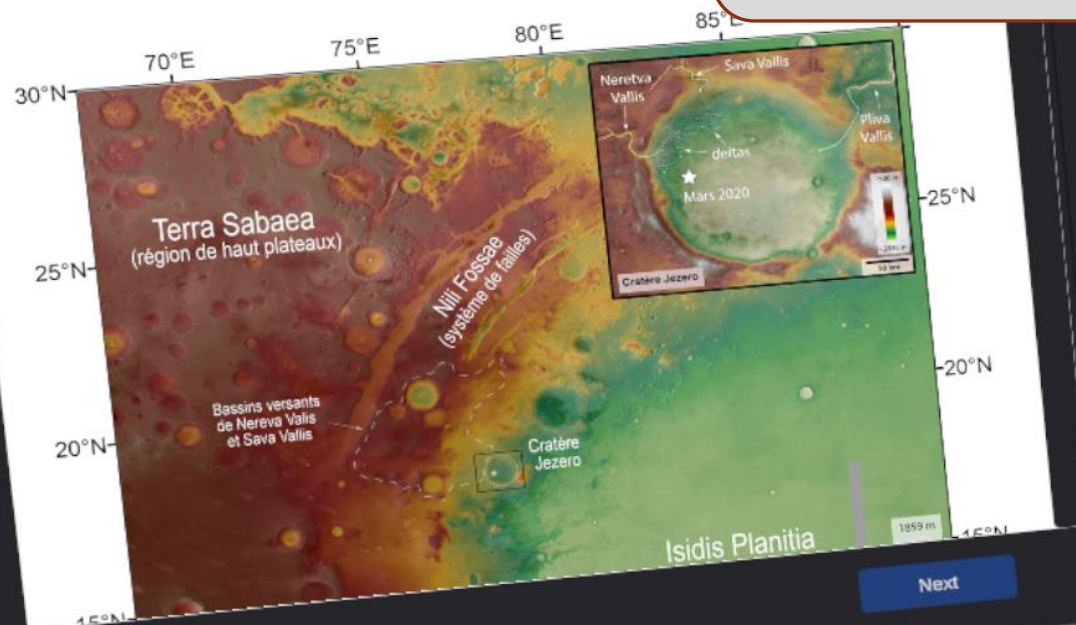
Ce cratère avait été, dans un premier temps, sélectionné pour le Mars Science Laboratory, mais il a été rapidement écarté au profit d'autres lieux plus propices avant d'être rapidement écarté au profit d'autres lieux plus propices, commencer par le site voisin de Nili Fossae.



## VR/3D client software

- Visualize virtual scenes
- Ease sharing online information in the virtual world
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Planets



Next

Move

Edit

Point

Line

Polygon

Distance

Angle

Plane

Clinometer

Compass

Position

Photo

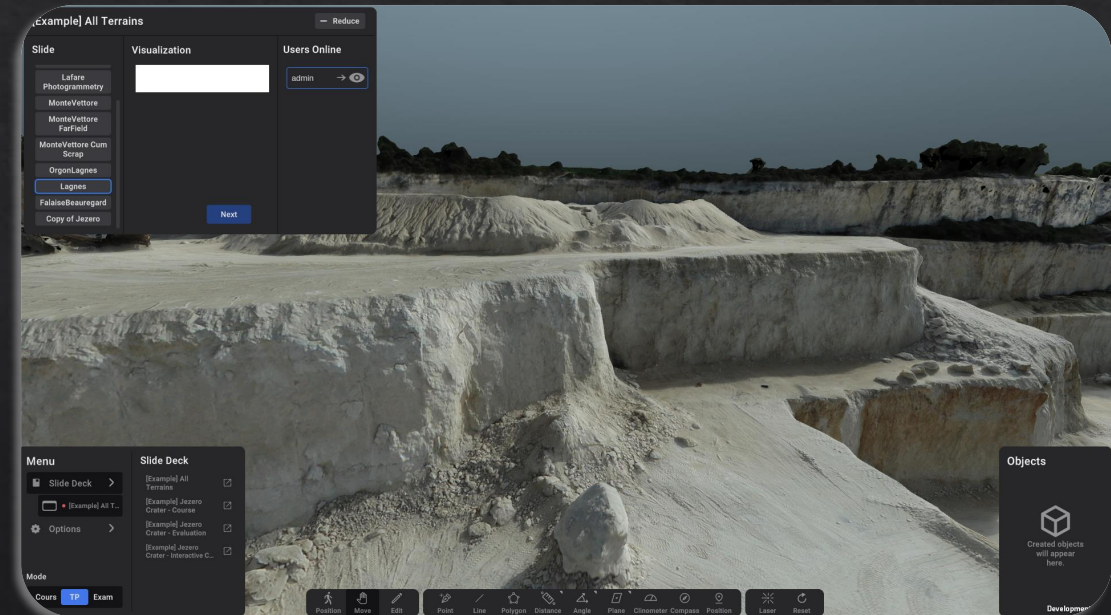
Laser

Reset

2D Debug

# On y gagne quoi?

- ◆ Gain en **productivité** grâce à une visualisation efficiente
- ◆ **Visualisation** ET **partage** de jumeaux numériques de terrains réels
- ◆ Expérience **immersive** (3D/VR) et **collaborative**
- ◆ Planification/préparation d'opérations sur le terrain
- ◆ Navigation/orientation
- ◆ Formation/pédagogie
- ◆ Extraction de données quantifiées géoréférencées

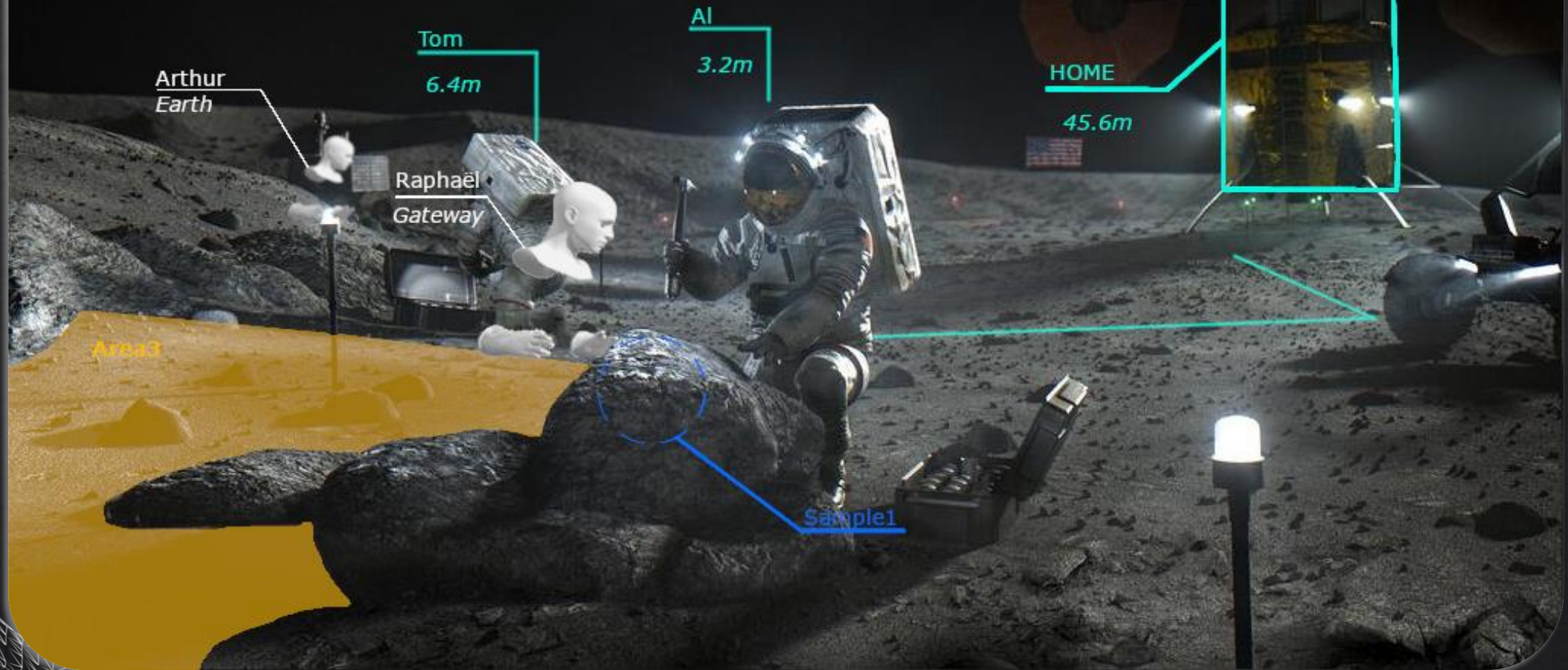




# VARIA



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TECH THE MOON  
Lunar Incubator