

EPIC Online Technology meeting on Microwave Photonics

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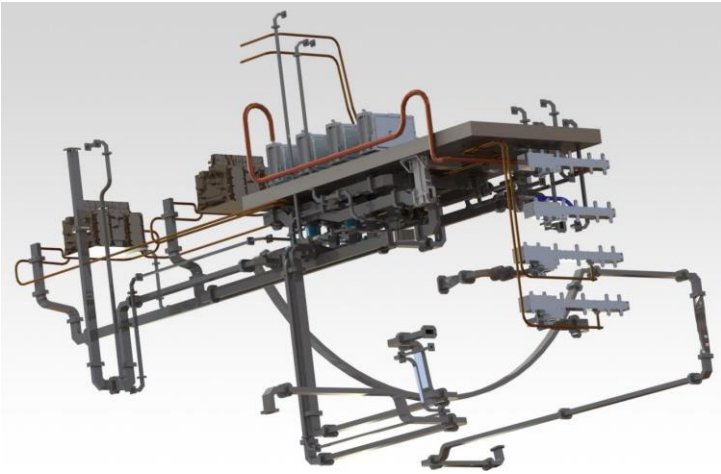


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Antwerp Space: Space communication: Recent achievements

JUICE Com Subsystems



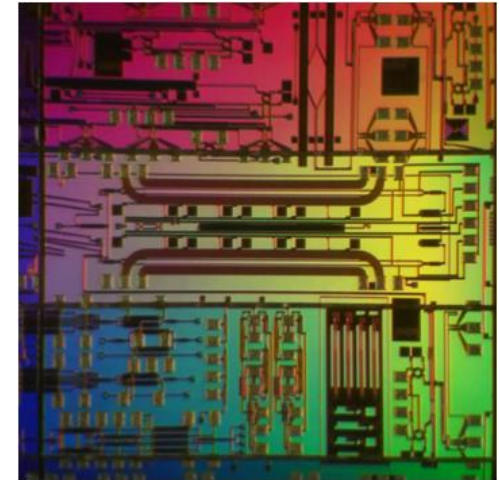
Very compact Radio-Science coherent transponder instrument to Land on Mars's surface (ExoMars 2020 mission)



Model of the LaRa instrument

This is the rationale to consider **Photonic Integration Technology (PIC)** for communication satellites

From 2015: Photonics



Feb 2020: Integrated Software-defined radio modem on ISS



Antwerp Space uses of photonics in Spaceborn applications

Core element of Laser communication terminals



Satellite Beam Steering Antennas

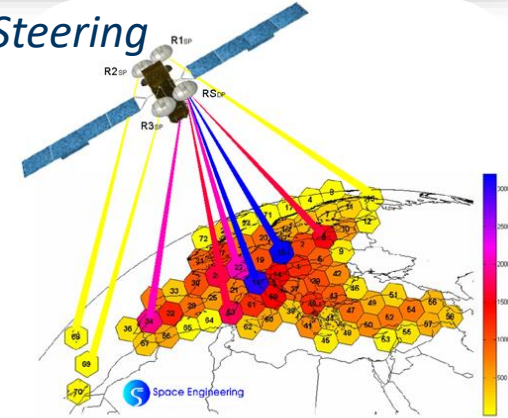
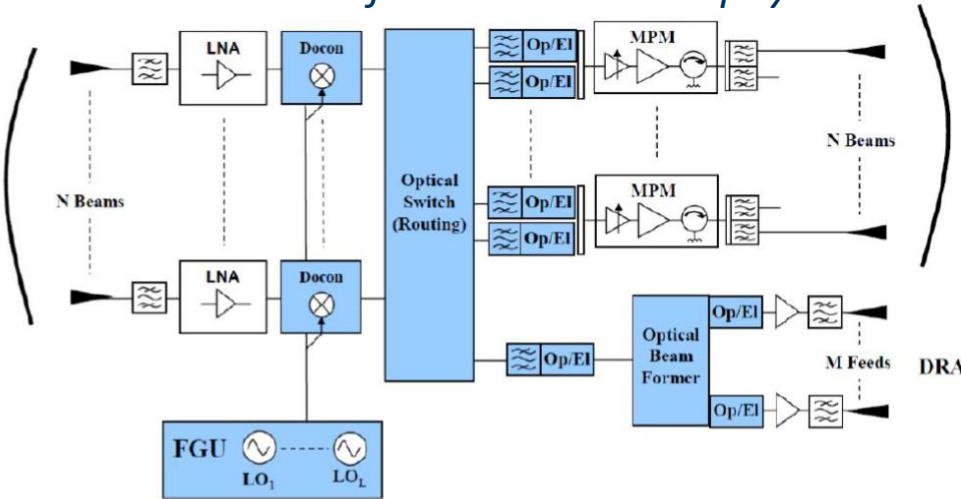
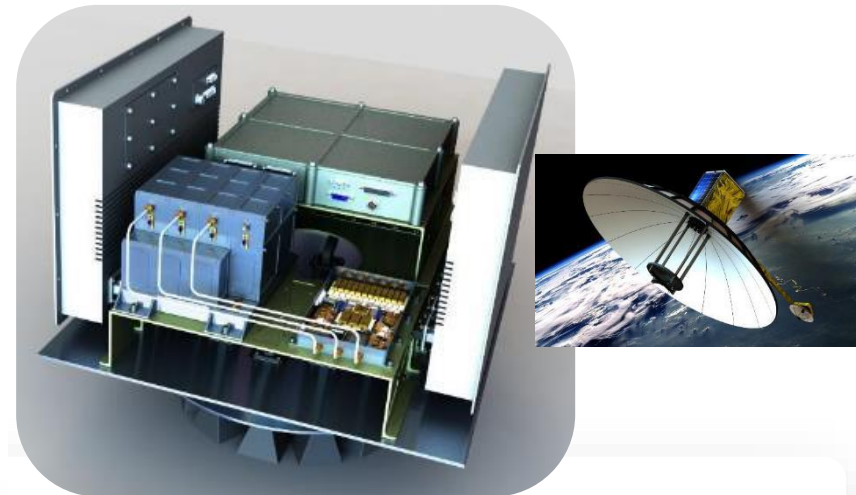


Fig. 1 – Ka-band Multi-Beam Traffic [Mbps] Scenario for BBS

Core elements of Flexible Telecom payload



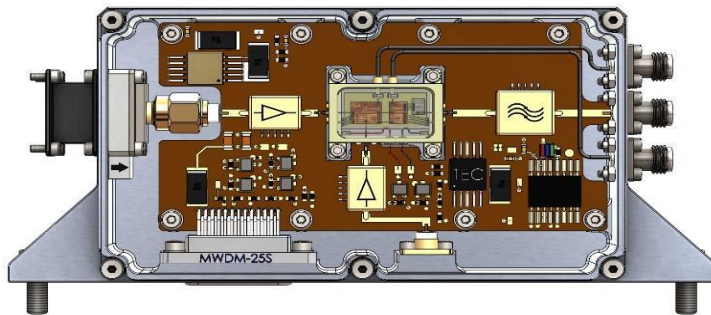
Radar instrument front-end



Antwerp Space Microwave Photonic Activities: iMWP for Satellite Communication: frequency conversion & Radar

iMWP application for frequency down-conversion

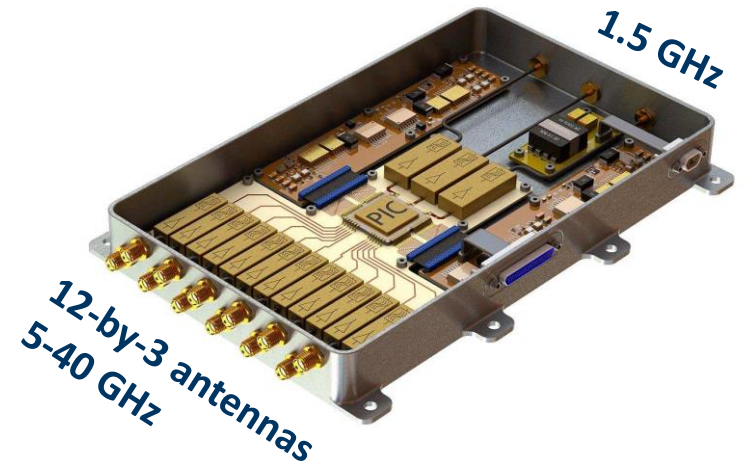
iMWP application for a photonic beamformer



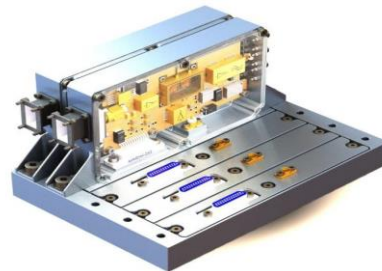
RF Input:
47-50 GHz



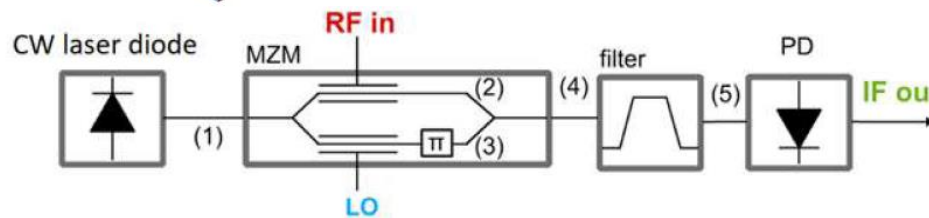
IF output:
17-20 GHz



EPFCv2
Duration: 2019-2022
TRL-level: 5-6



Spacebeam
Duration: 2020-2023
TRL-level: 5-6



What we can do for you & you can do for us?!

- ▶ Discuss your space-application (using iMWP) with us:

Antwerp Space as

- End-user requirement/ Equipment Integrator
- Integrated Microwave photonic system design, generation of requirements for PIC
- Control electronics
- RF-front-end design

- ▶ We would like to collaborate with you:

Antwerp Space looks for partners for:

- ❑ Space-qualified components & procedures:

- Photonic building blocks (BBs)
- High-speed, low-power, RF front-ends
- Packaging
- Photonics & RF interconnects

- ❑ **End-users (Satellite/payload integrators) in the space sector**

- For the targeted application uses

Thank you !

Is there any Questions ?

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