

SPACE for NATIONAL DEVELOPMENT

BARC: A Broadband Apparatus For Underserved Remote Communities

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2019

- **50** years of “internet”
- **30** years of “WWW”
- **25** years of e-commerce
- **51%** of the global population “connected”

Global Broadband Connectivity



■ % Connected
■ % Not connected



Barriers to Broadband Adoption

- Affordability
- Education & Equipment
- Relevance
- Infrastructure



The “Rural Gap”

This expression describes the condition where people living in rural areas are less likely to use internet services as compared to their urban counterparts, due to a lack of access infrastructure.



“Rural Mobile Internet Gap” in 2018

- **40%** low- to middle-income countries
- **58%** Sub-Saharan Africa



Rural Infrastructure - Challenges

- Communications i.e. “The Last-Mile”
- Electricity



Infrastructure - Opportunities

- Increase in Satellite Broadband Capacity
 - “Mega- Constellations”
 - Flat panel antennas
- Cheaper Renewable Energy
 - Cheap photovoltaics
 - Battery technology
 - Fuel cells

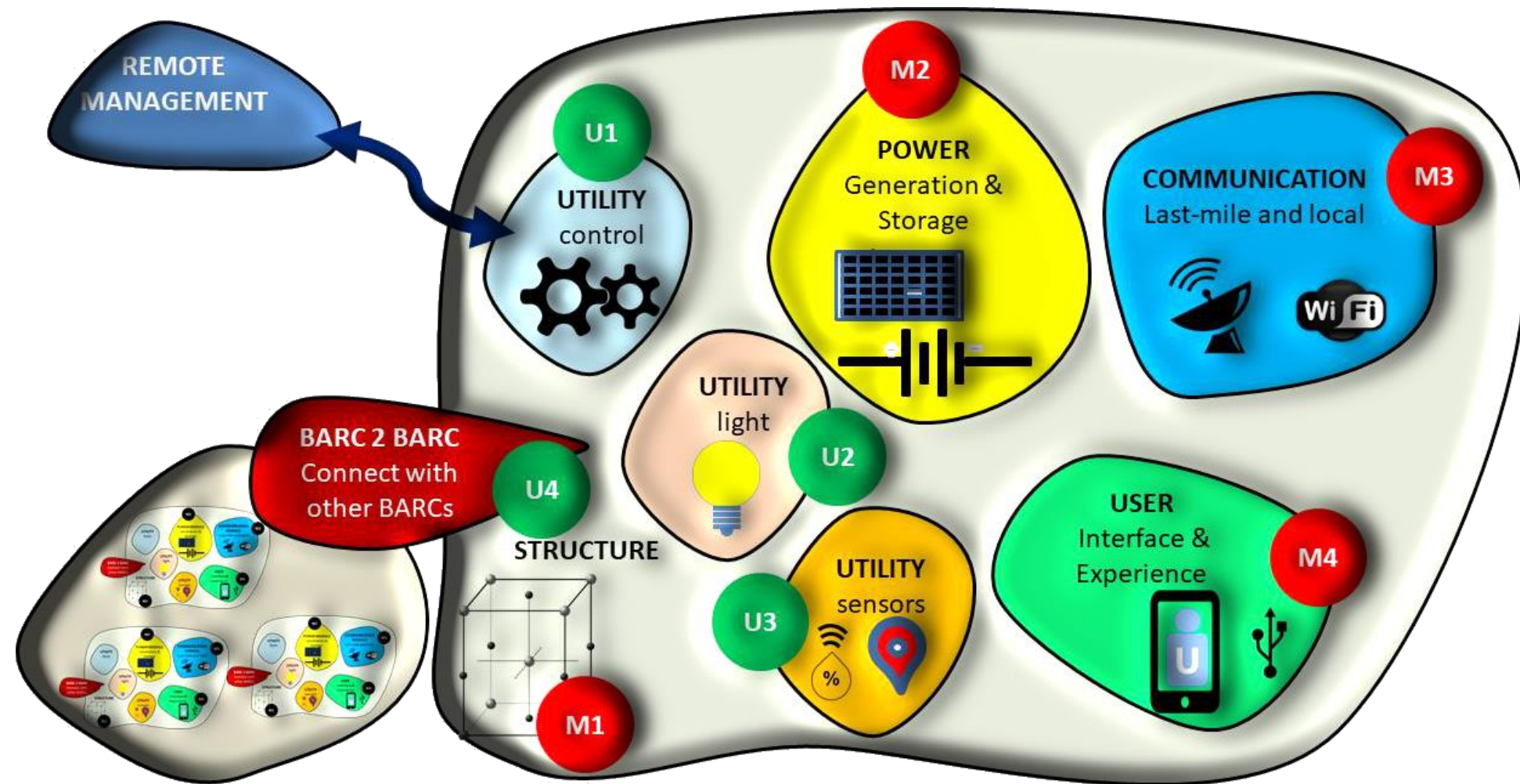


BARC - Concept

A modular “self-contained” broadband internet system for remote communities. Using advances in satellite broadband and renewable power technology. Integrated into functional structures.

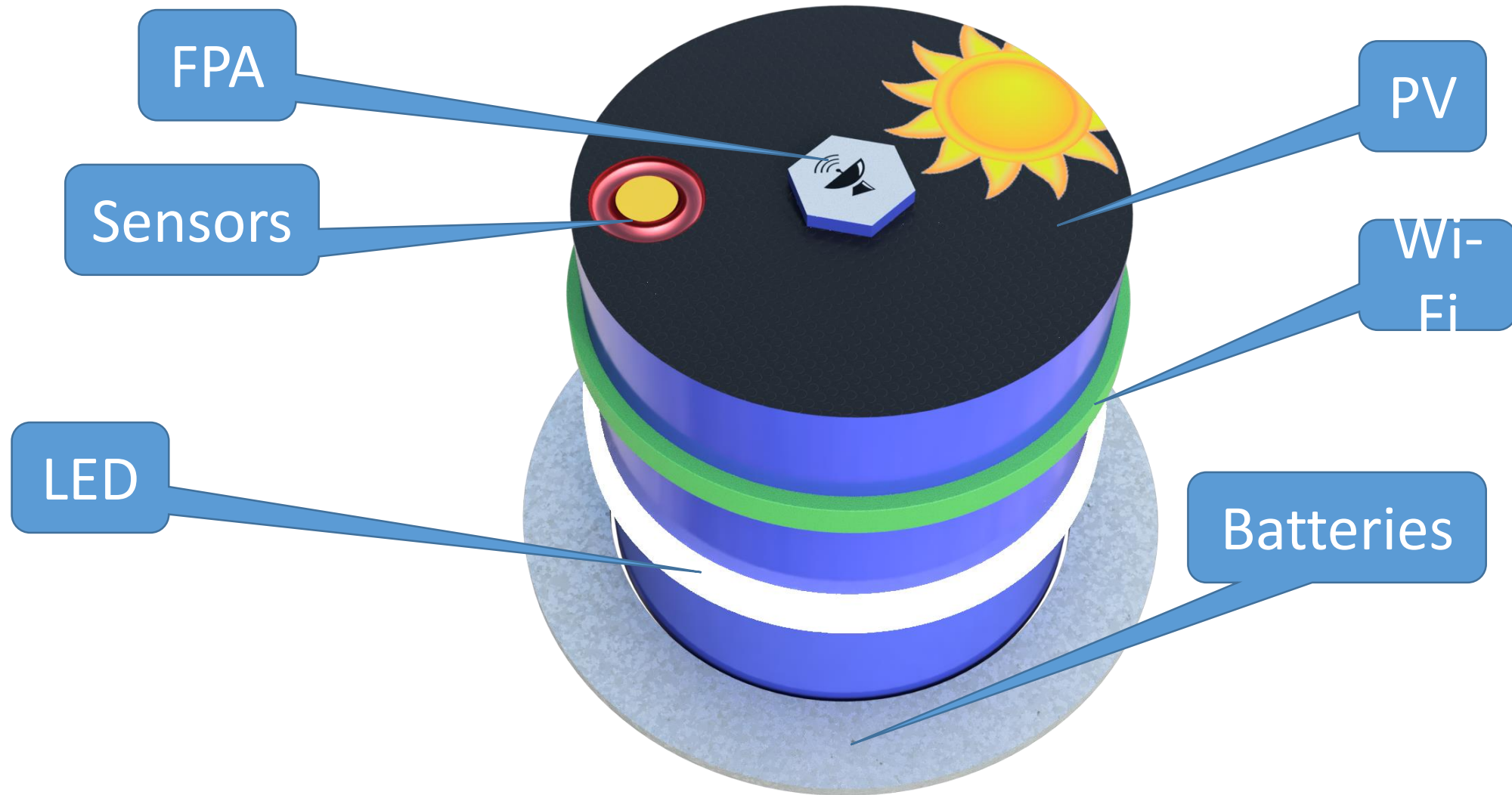


BARC “Cell” Architecture



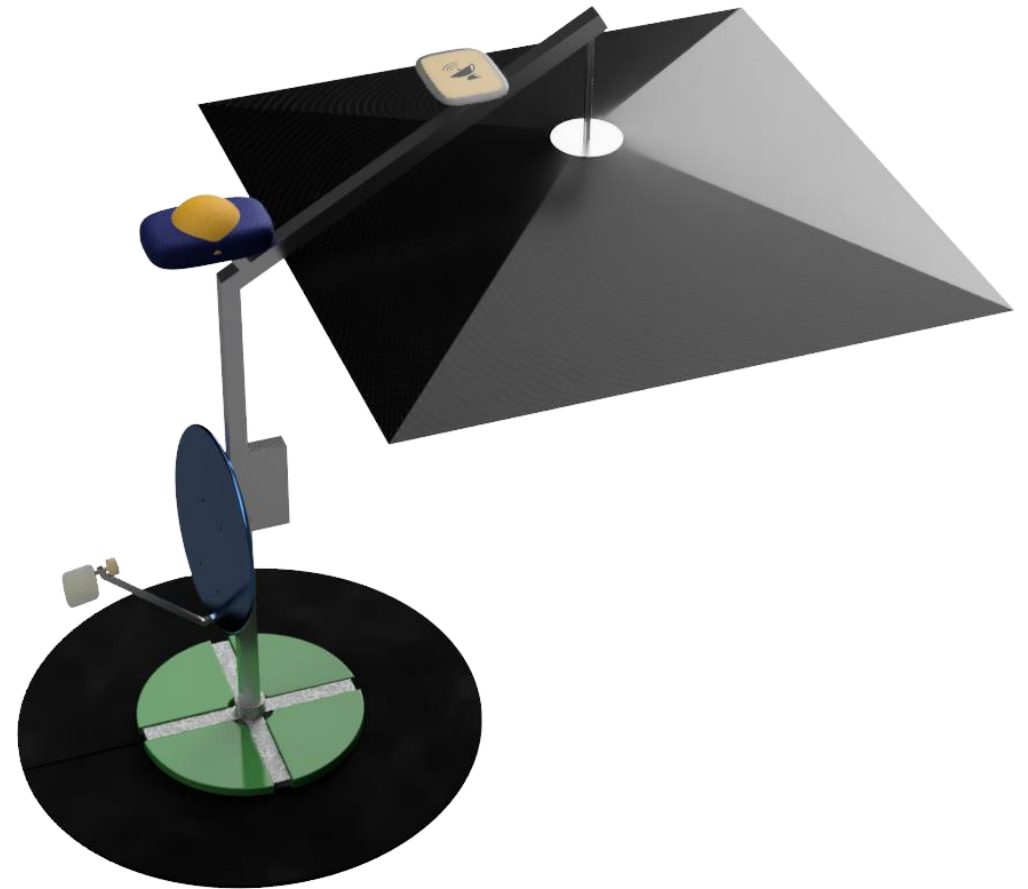
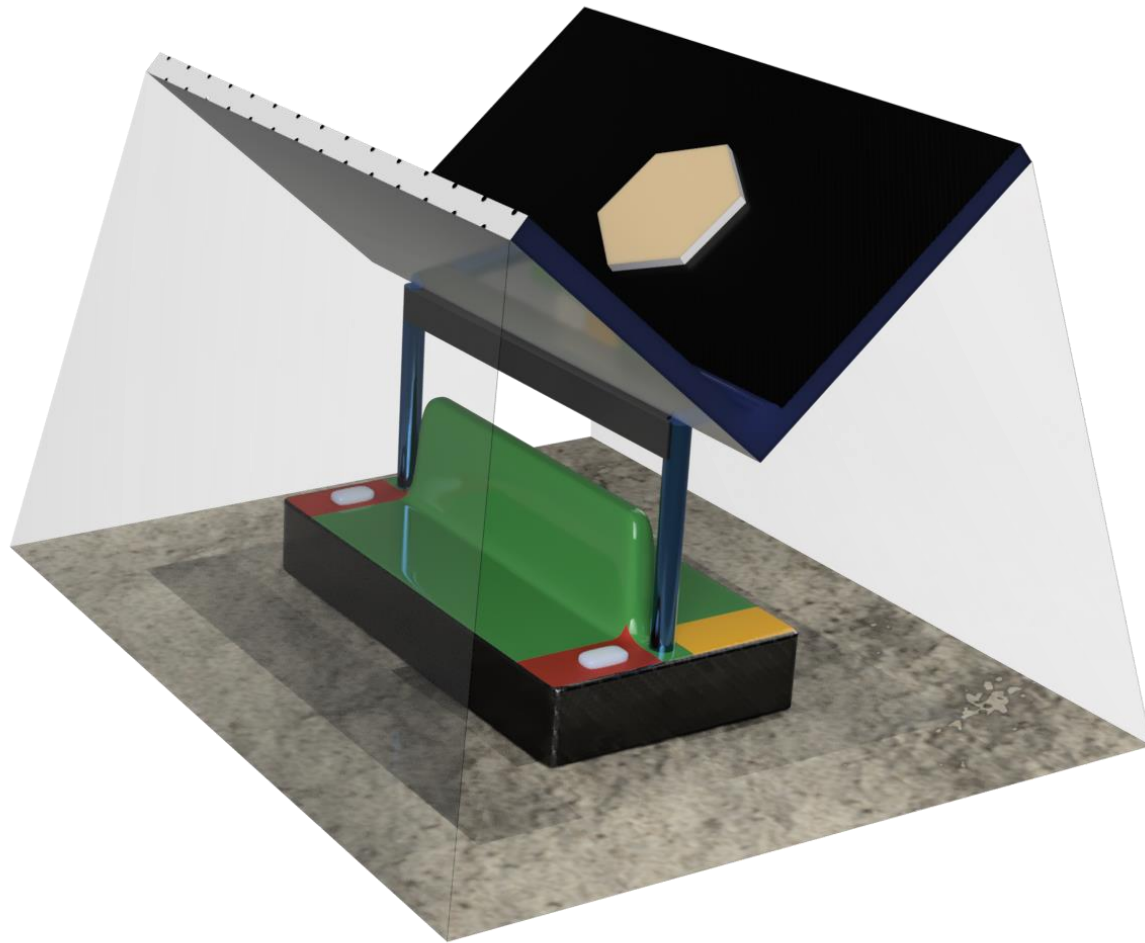


Form & Function Design Concept



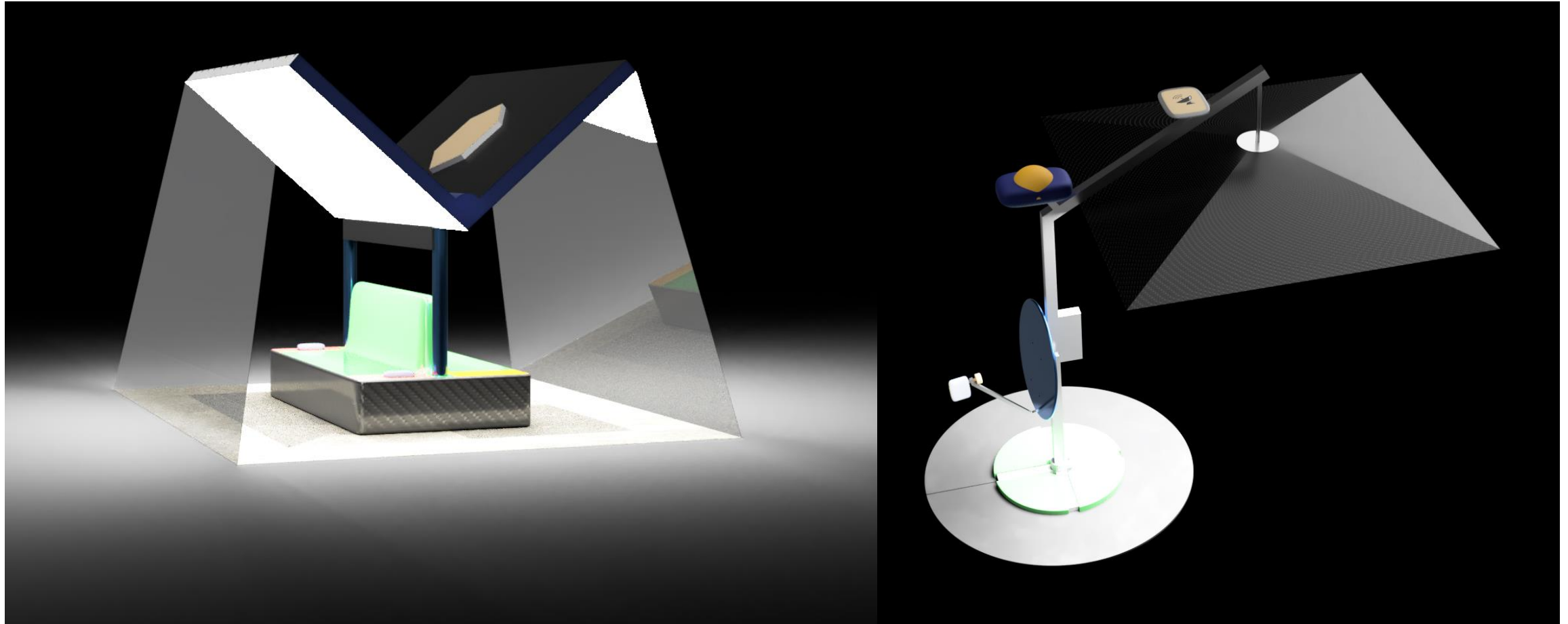


More Design Concepts





Design@Night





BARC – FAB Analysis

- **Features :** Self-contained , modular, uses satellite communication, renewable energy technology, collects local environmental data and provides light.
- **Advantages:** Easy to assemble, can be deployed in most remote areas, not dependent on any existing infrastructure and provides all required ancillary services for broadband internet use.
- **Benefits:** Provides broadband for remote communities to enable participation in the 4IR ecosystem.



4IR – Broadband Access Essential

Access to broadband internet is the key to participation in the emerging Fourth Industrial Revolution, with those on the wrong side of the digital divide automatically excluded.

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THANK YOU

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