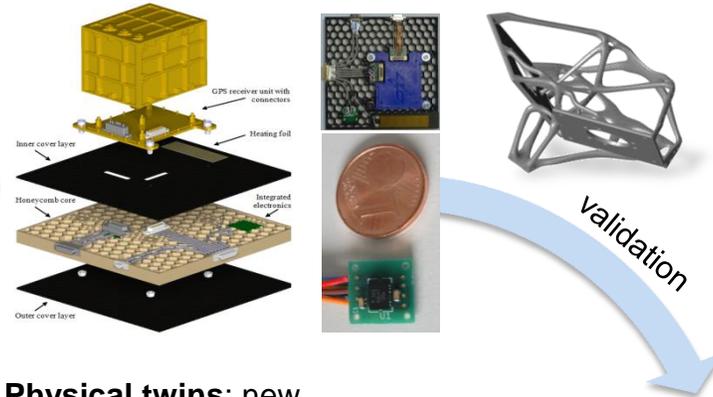
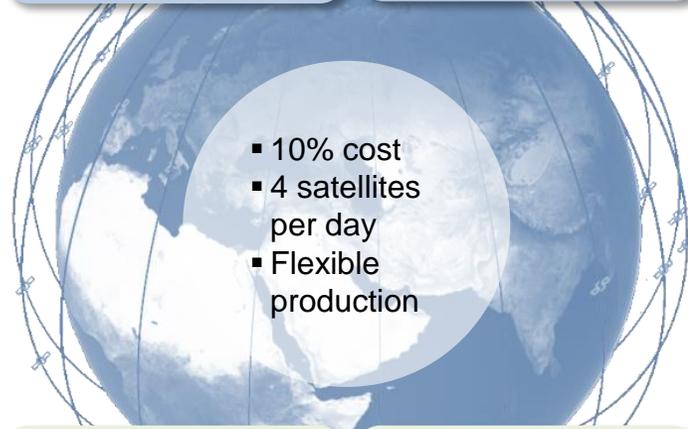


IRAS Integrated Research Platform for Affordable Satellites

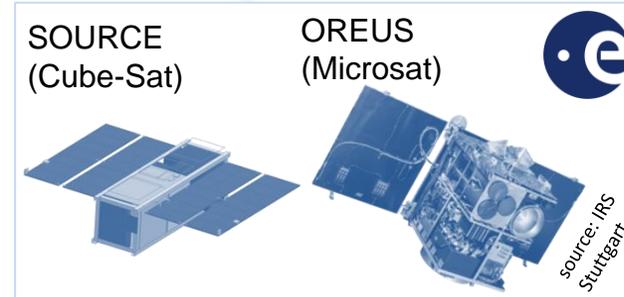
- 3D-Printing of**
 - Ceramics
 - Polymers
 - Metals
- Components**
 - Bionic
 - multifunctional
 - lightweight
- Low cost electronics** – Synergy with automotive industry
- Electrical and CMC based chemical propulsion concepts**



Physical twins: new production technologies

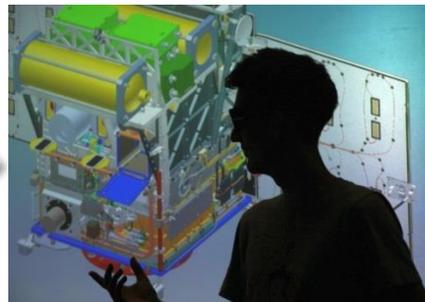


- 10% cost
- 4 satellites per day
- Flexible production



Digital twin: new architecture

- Flexible Digital Concurrent Engineering Platform**
- block chain based data security**
- Integrated data management system**
- Secure shop floor data management**



validation

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Research partners

- DLR Institute of Structures and Design (project management)
- Fraunhofer Institute for Manufacturing Engineering and Automation IPA
- University of Stuttgart, Institute for Space Systems

Industry partners

- Airbus Defence & Space, Friedrichshafen
- ArianeGroup, Lampoldshausen
- Astos Solutions GmbH, Unterkirnach
- Azur Space, Heilbronn
- blockLAB, Stuttgart
- Rockwell-Collins, Heidelberg
- SpaceTech GmbH, Immenstaad
- Tesat SpaceCom, Backnang
- Thales Alenia Space Deutschland GmbH, Ditzingen
- TRUMPF GmbH, Ditzingen



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