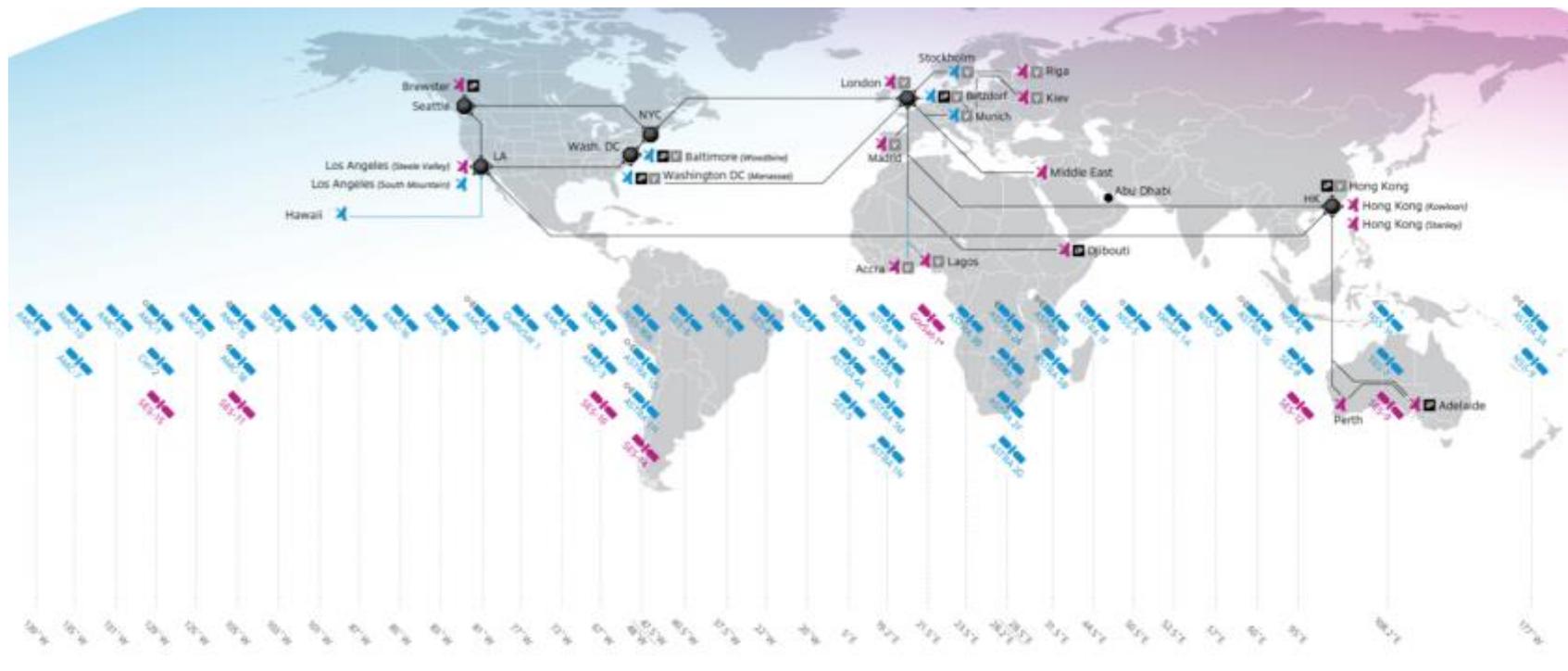


SES technology framework

Martin Halliwell, CTO

Robust foundation of fleet and ground segments

SES's global satellite fleet and access network



Industry-leading network performance:
>99.99% network availability

Unsurpassed technical understanding:
8.9/10 rating of SES's technical
 excellence in customer service

Expanding in a scalable and flexible manner

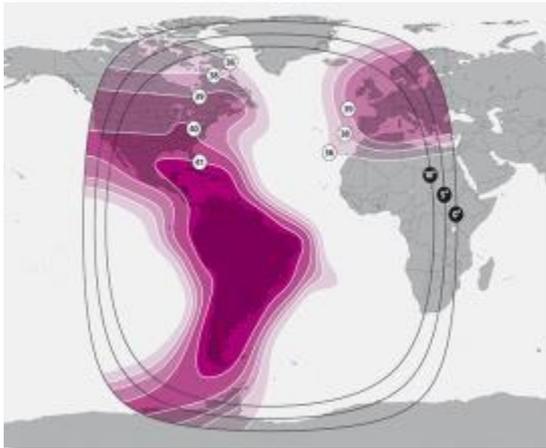
| | 2016 | | 2017 | | | |
|----------------------|----------|----------|----------|----------|----------|-----------------|
| | SES-10 | SES-11 | SES-12 | SES-14 | SES-15 | SES-16 |
| Payload type | Shaped | Shaped | Shaped | Shaped | Shaped | Fully steerable |
| HTS payload | | | 14 GHz | 12 GHz | 10 GHz | |
| Digital processing | | | 2.6 GHz | 2.5 GHz | | |
| Satellite propulsion | Chemical | Chemical | Electric | Electric | Electric | Chemical |
| Launch vehicle | Falcon 9 | Falcon 9 | Ariane 5 | Falcon 9 | Ariane 5 | Falcon 9 |

- ▲ Combining industry-leading procurement standards with the latest innovations
- ▲ Adopting an incremental approach to SES technology evolution

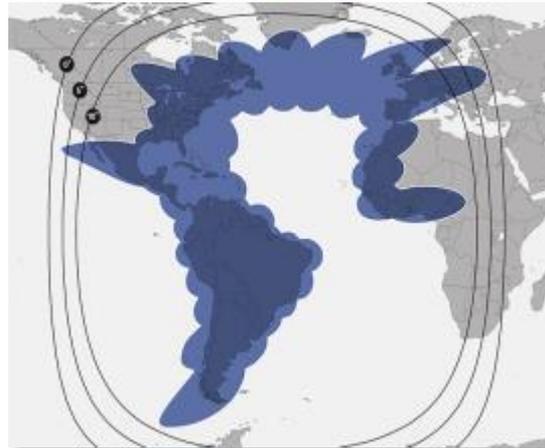
Case study: delivering scalable and flexible satellite coverage

- ▲ SES-14 (Latin America) delivers flexible, hybrid capacity and capabilities
- ▲ C-band coverage for video
- ▲ Ku-band wide-beam and HTS for IFC/IFE
- ▲ Supporting NASA-funded GOLD hosted-payload

C-band (wide beam) coverage



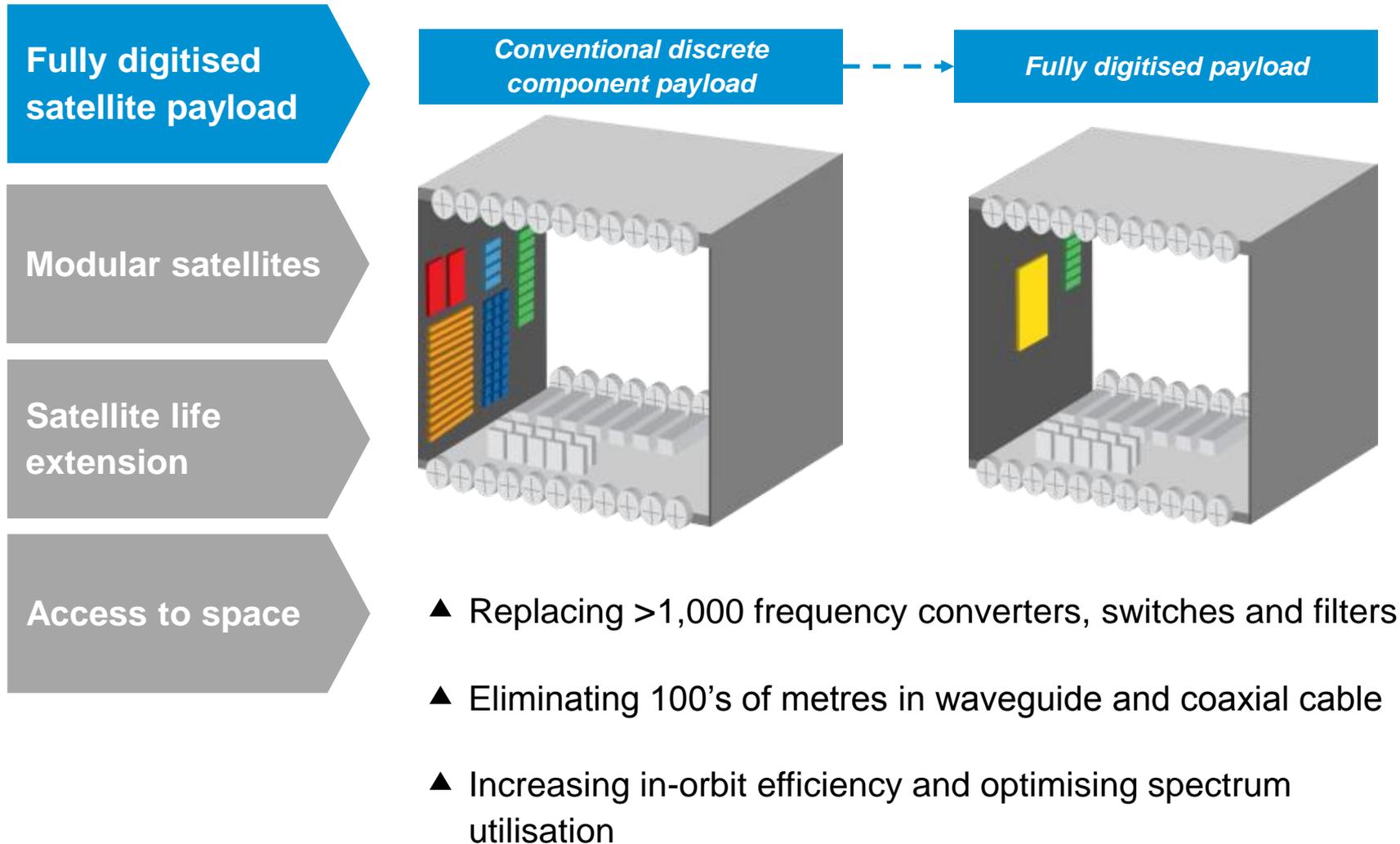
Ku-band (spot beam) coverage



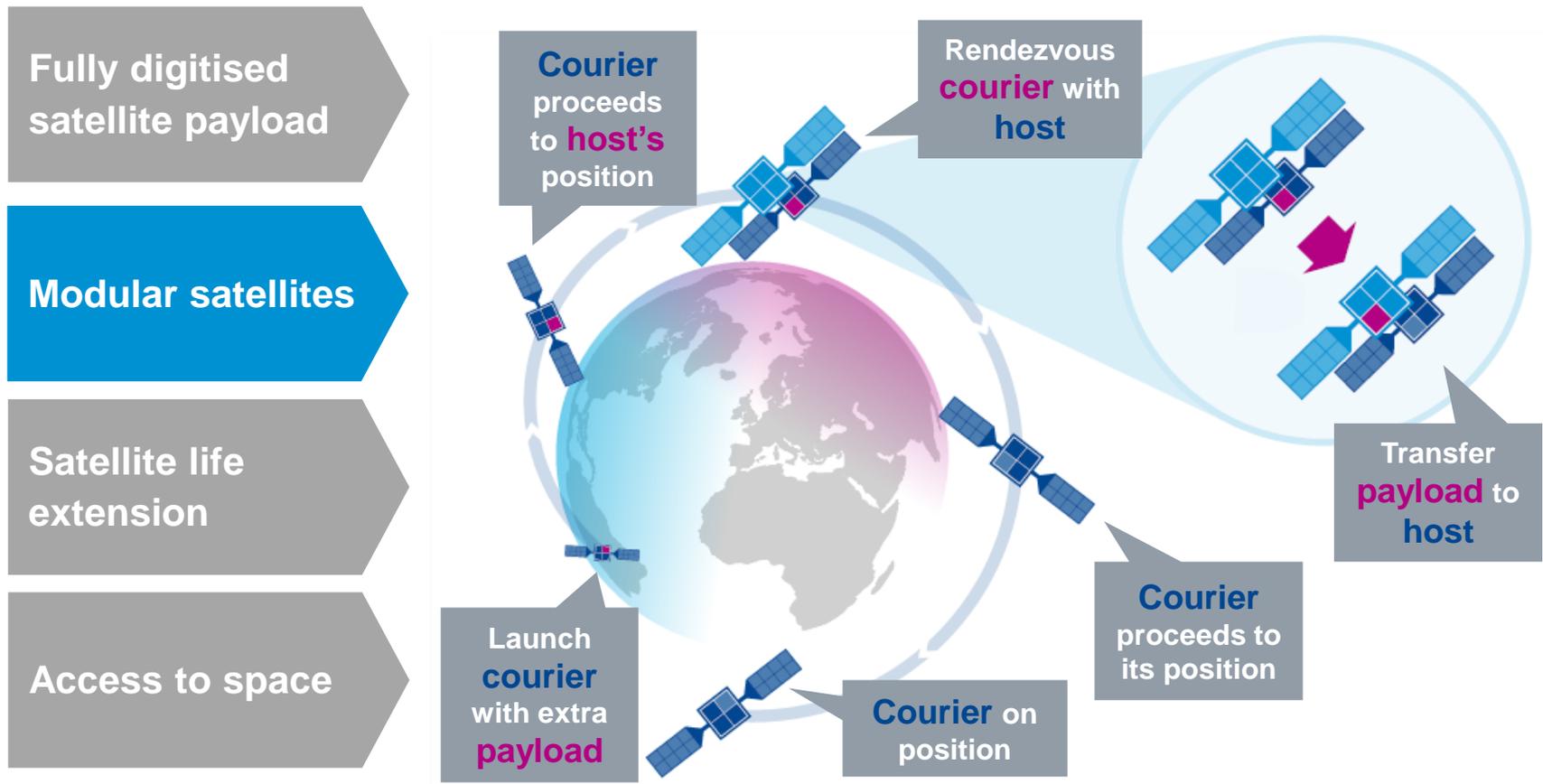
Ku-band (wide beam) coverage



Driving further efficiencies through innovation

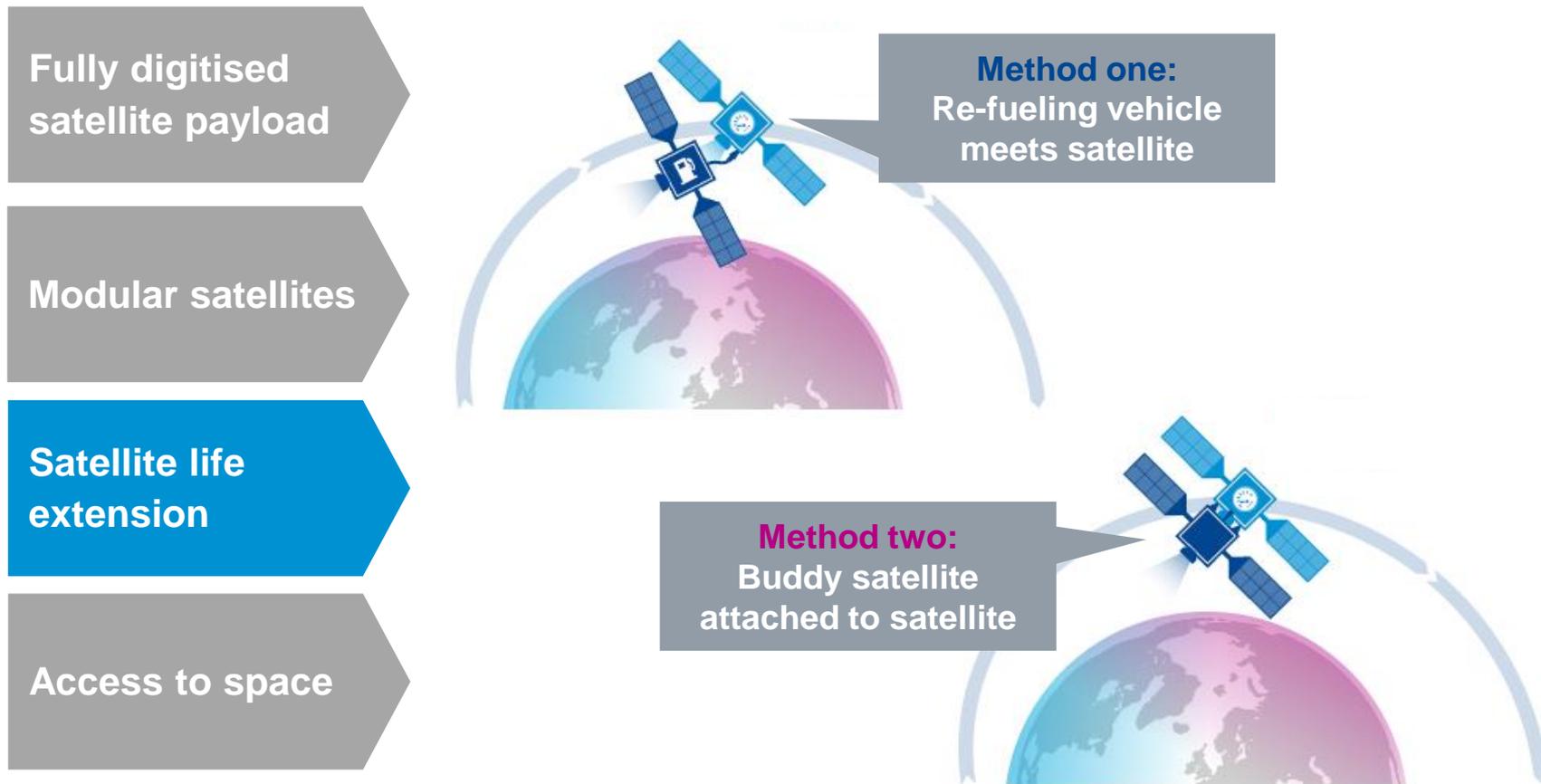


Driving further efficiencies through innovation



- ▲ Creating a more fluid and flexible service format by changing the static nature of satellites

Driving further efficiencies through innovation



▲ Satellites often remain operable well beyond fuel depletion

Driving further efficiencies through innovation

Fully digitised
satellite payload

Modular satellites

Satellite life
extension

Access to space

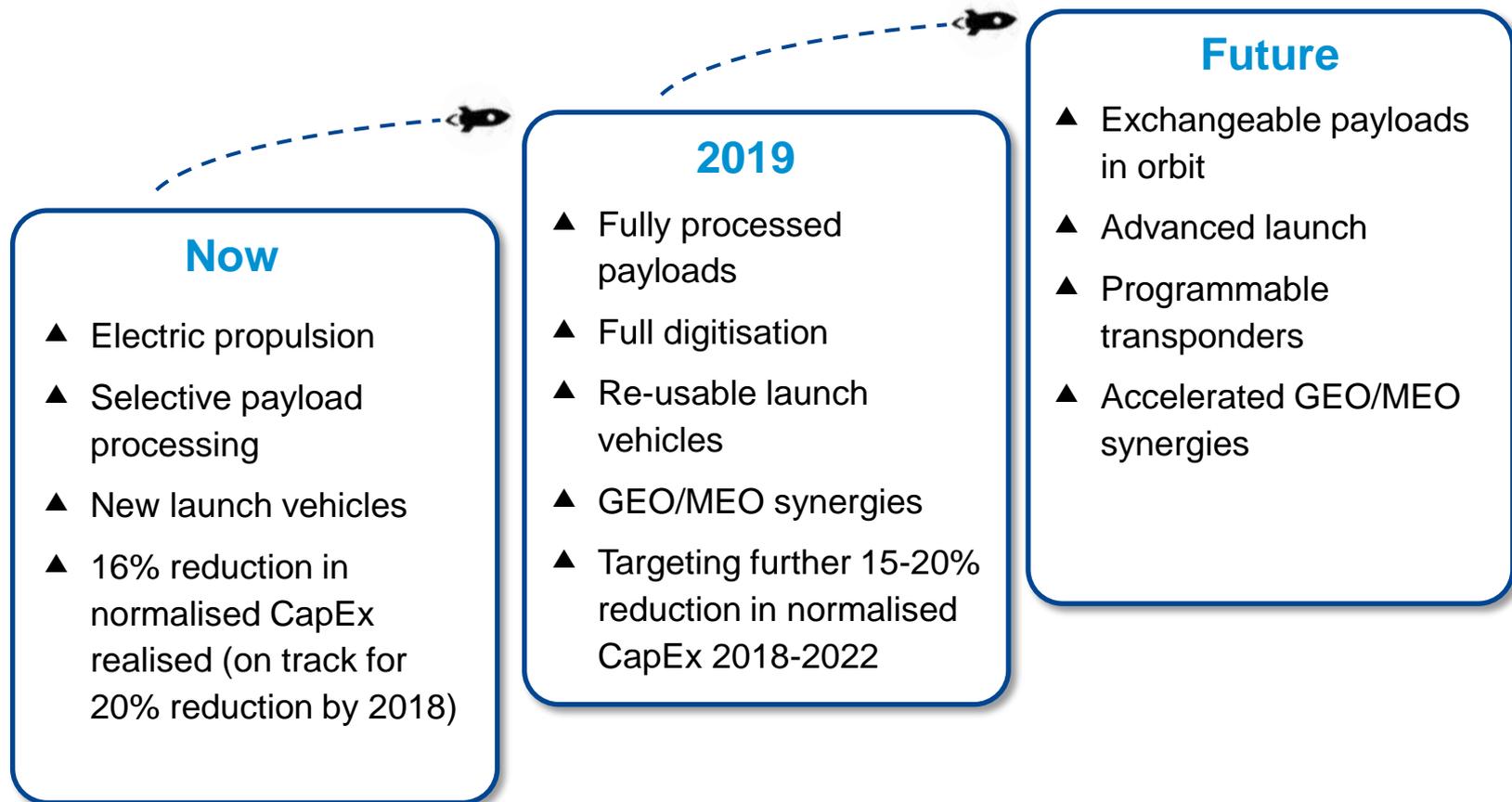


Source: SpaceX

- ▲ SpaceX building rockets faster, increasing launch frequency
- ▲ Re-using rocket's first stage could reduce cost further
- ▲ Modular design and more powerful engines improving time to market and flexibility (Ariane 6, MHI H-III)

Executing a future-proof approach

- ▲ Establishing satellite at the heart of the digital ecosystem



Enabling SES's market verticals

Diverse, cost-effective and timely access to space

Integrating agile, adaptable capacity into the customer's network

Reducing cost per bit and in-orbit price

Ubiquitous coverage and flexible capacity allocation

Extending the life of SES's space assets



Video



Enterprise



Mobility



Government