5G Connected Edge Cloud for Industry 4.0 Transformation

ONF SPOTLIGHT

How to build a private cellular network & transform industry

Jacob Reeb & Colin Campbell
Cambridge Consultants

2020

Scale, reach & expertise for complex global projects

- **60+** years

- **900+** team

- **90%** engineers, designers & scientists

- **100** laboratories

- **200,000sqft** of development facilities

- **400+** projects per year

- **70%** repeat business

- **6** offices

SEATTLE

SAN FRANCISCO

BOSTON

CAMBRIDGE

TOKYO

SINGAPORE

Industries face extraordinary change

- **80%** of executives think their business models will be disrupted soon

- **Only 16%** of CEOs believe their company is stronger than competitors

- **54%** of companies have difficulty connecting business strategy to innovation strategy

Megatrend:
Wireless is evolving to offer flexible software defined intelligence

- Wireless networks are becoming distributed data centres

- Combining networks & compute brings huge value…

- & 5G offers flexibility deployment

- …but wireless is constrained by physics, making customization difficult

Ambition:

Achieve automation with a centralized 'brain'

Challenge: achieving high connection density with high reliability/low latency

Private network success factors

- Design predictability into the network through low-level customization

- Increase the network-node density to reduce the connection density

- Distribute the 'brain' to the bots to reduce the load on the network

Ambition:
Monitor & control
assets remotely

Challenge: balancing high-capacity
coverage with low-capacity backhaul

Private network success factors

- Move intelligence & decision making
  to the edge

- Use smart antennas to direct coverage
  to where it is needed

- Continuously optimize & adapt the
  network to meet changing needs

Ambition:
Train systems to perceive the world & make critical decisions

Challenge: building wireless solutions that manage high compute applications

Private network success factors

- Co-design the wireless & AI systems

- Optimize the AI models to run on limited resources at the edge

- Distribute the training & adaptation of the models

- Collect only the data you need

We are trusted by the ambitious to realize their most critical technology-based aspirations

Beaming 5G from the stratosphere
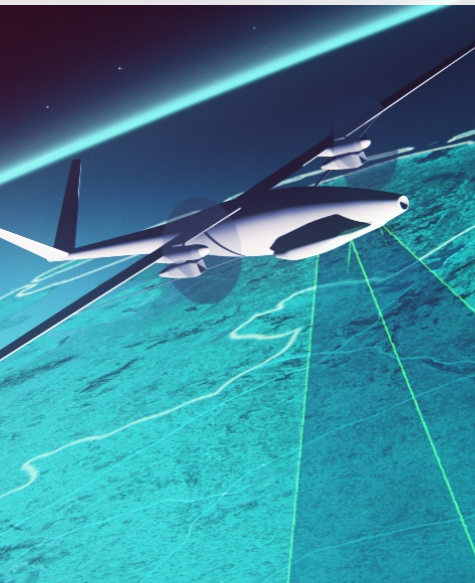
Pietro Fiorentini subsea sensor

Ocado smart platform

Iridium global satellite network

cambridgeconsultants.com/case-studies

AA-F42

Let's talk…

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