CAPITOL
Technology University

Will electric powered aircraft ever be commercially possible?

Presented at 7th Annual Electric Vehicle Event - 13th & 14th October , 2021
Virtual

CAPITOL
Technology University

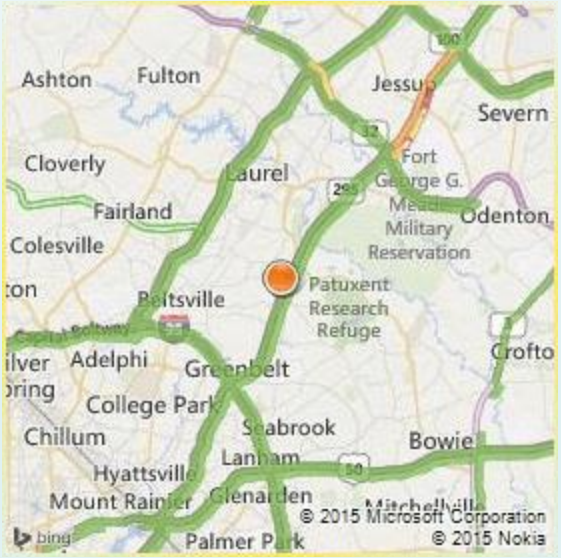
What are the real barriers?

Ian R. McAndrew PhD FRAeS
Dean of Doctoral Programs

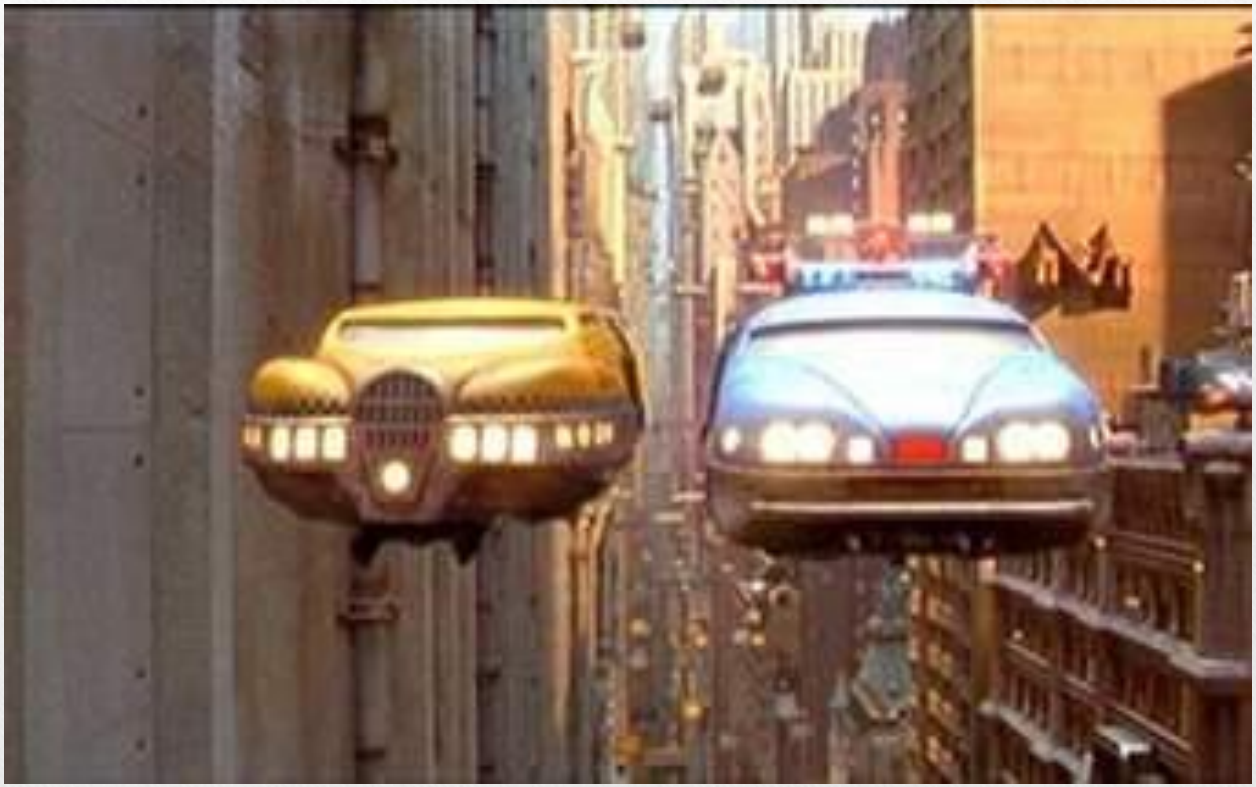
Presented at 7th Annual Electric Vehicle Event - 13th & 14th October , 2021
Virtual

CAPITOL
Technology University

Location



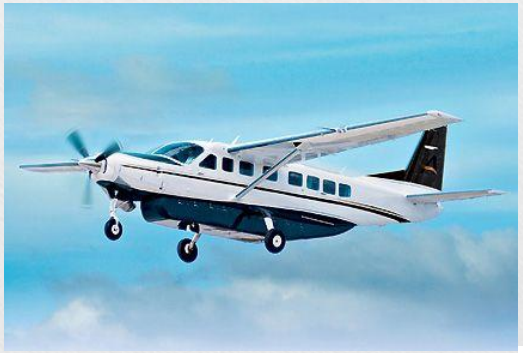
What is on the horizon?



CAPITOL
Technology University

What is generally accepted

- Aviation fuel 43 times more energy per kg than a battery
- Cesena Grand Caravan is the heaviest electric powered aircraft to fly that lasted 30 minutes



CAPITOL
Technology University

Plans

- 180 seater by 2030 onwards (very optimistic)
- Hybrid electric/fuel most likely (2025)
- Short journeys possible

CAPITOL
Technology University

The new norm

- Large commercial aircraft will not be able to turn around as fast (Ryanair operate 40 minutes cycle)
- What short Journeys?
- Remove/limit short journeys?

CAPITOL
Technology University

The new problems

- Weight – pilotless the easiest weight reduction
- Laws – new traffic highway code
- Maintenance of ‘airworthiness’
- Operational cybersecurity

Success Risks?

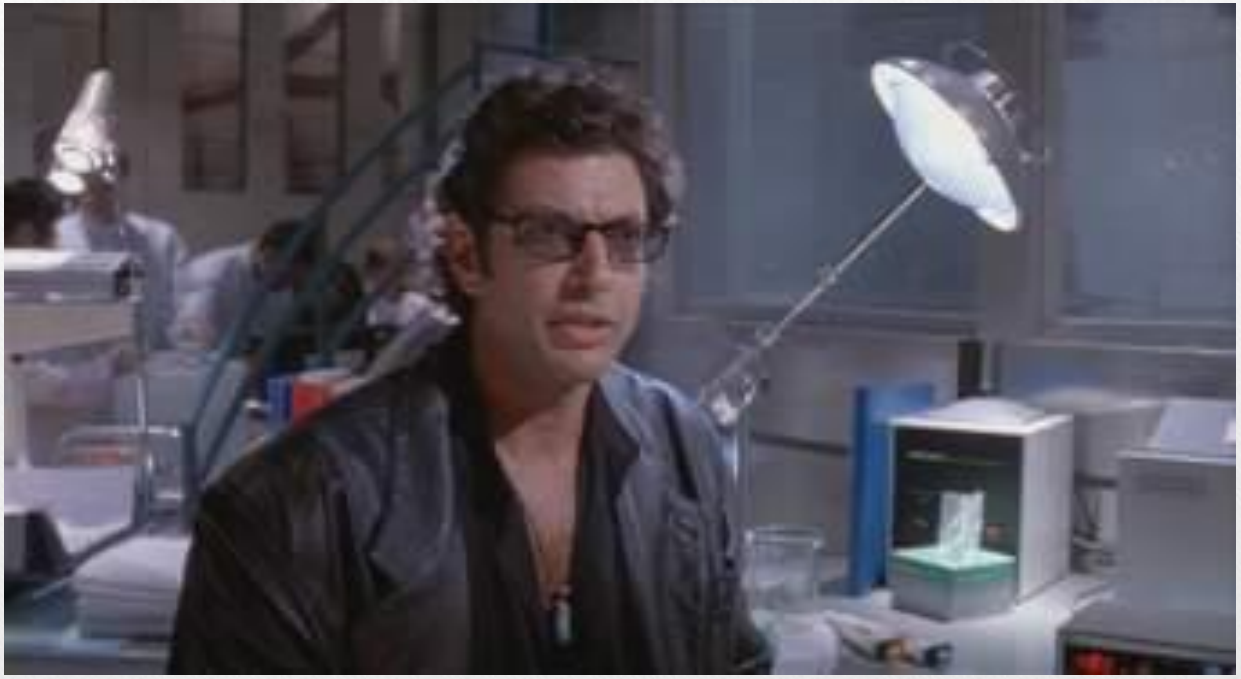
- Aircraft ready before the system ready
- Charging car parks
- City focused
- Stops – domestic or hub and spoke
- Safety

Spotting Cyber Attacks

BMW

CAPITOL
Technology University

Commercial Aviation



Dr Ian Malcolm
Instead of asking ‘can we do it?’
We ignored saying ‘if we should do it’

CAPITOL
Technology University

Conclusion

- Commercial Electric Aviation not likely to be in the medium future
- Weight needs addressing (Pilot)
- Infrastructure and maintenance systems not being addressed
- Legal aspects not keeping pace with technology
- Applications parochial in the long term
- Offers changes to how we live

CAPITOL
Technology University

Thank You

Questions?

CAPITOL
Technology University

CAPITOL
Technology University