



ICAO

UNITING AVIATION

E-GAP



ICAO Global Aviation Partnerships on Emissions Reductions (E-GAP)

Multiplying Environmental Action

Innovation throughout the airplane life cycle

Sean Newsum,

Boeing Commercial Airplanes



Designing for the environment

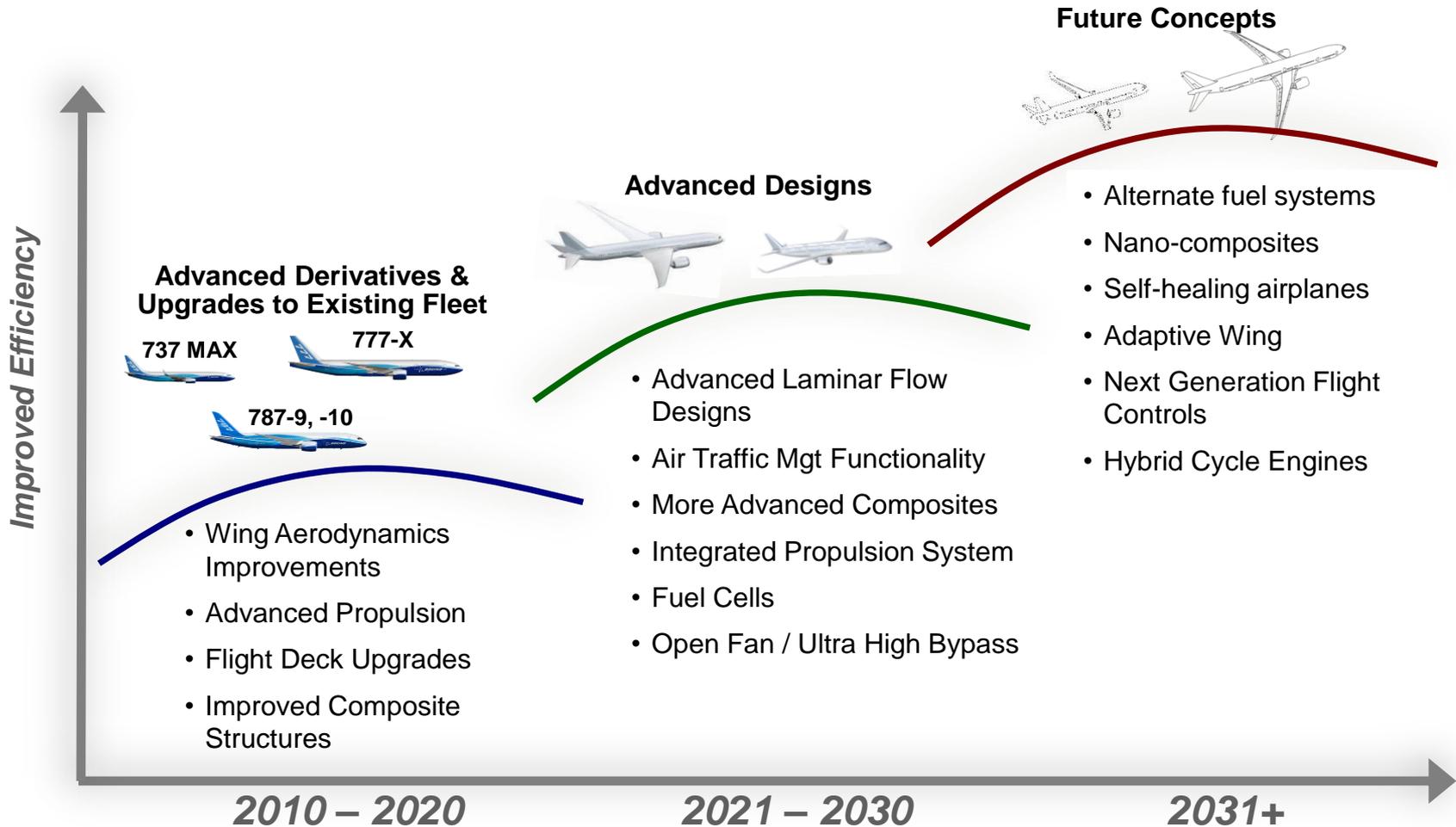


- Global Emissions
- Energy
- Materials
- Community Noise
- Local Emissions
- Water

A systematic approach to improve our environmental performance



Focused on technology innovation To achieve environmental goals





ecoDemonstrator Program

Accelerate, Collaborate, Inspire

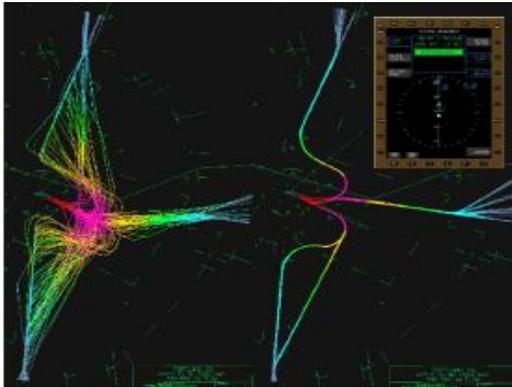
- **Accelerate technology**
 - Learn by doing, reduce risk
 - Speed implementation
 - 18 to 24 month rhythm
- **Collaborate** with government, suppliers and industry
- **Inspire** action and innovation



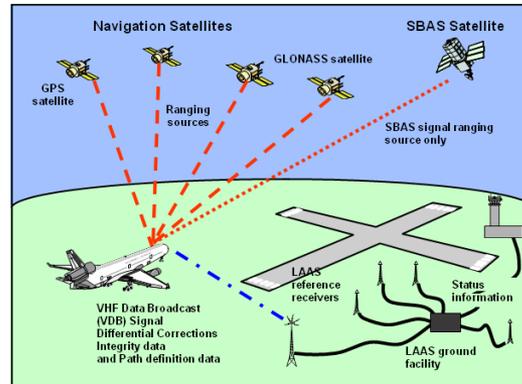


ecoDemonstrator Program Operational Efficiency Technologies

NASA Airborne Spacing
(ASTAR), ADS-B In

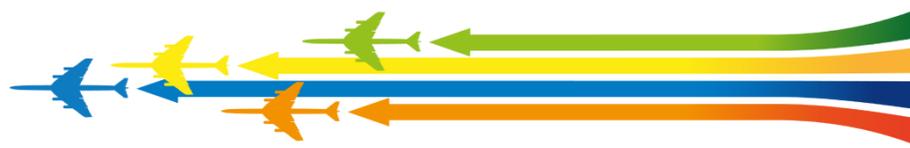


GLS CAT III



Information Services
Flight Deck





ecoDemonstrator Program

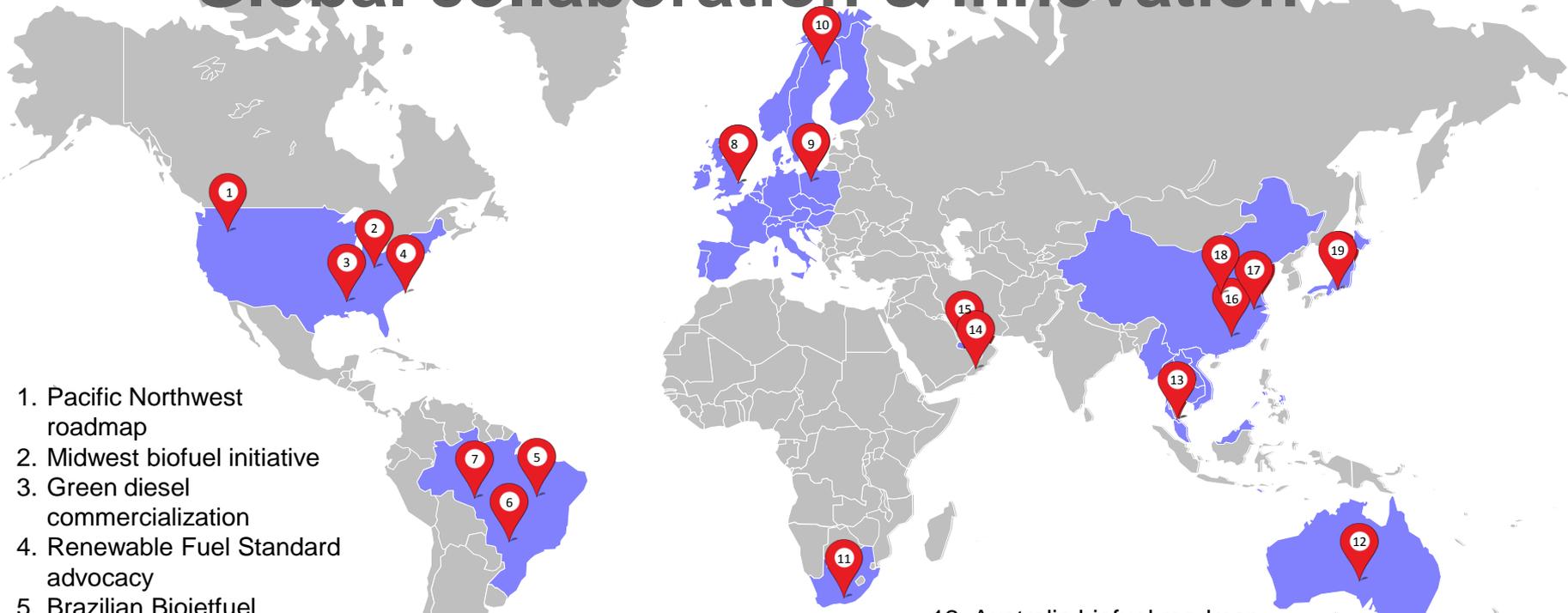
Sustainable Printed Flight Deck



- Recycled carbon fiber used in 3D printing process
 - Flight deck's aft aisle stand
 - Environmental control system diffusers
- More sustainable materials with Additive Manufacturing
- Flexible design to meet customer requests



Boeing biofuel engagements Global collaboration & innovation



- 1. Pacific Northwest roadmap
- 2. Midwest biofuel initiative
- 3. Green diesel commercialization
- 4. Renewable Fuel Standard advocacy

- 5. Brazilian Biojetfuel Platform
- 6. Joint biofuel research with Embraer
- 7. GOL biofuel flights
- * Global coordination for Sustainable Aviation Fuel Users Group

- 8. Virgin Atlantic / LanzaTech collaboration
- 9. AIREG Membership
- 10. Nordic Initiative for Sustainable Aviation
- 11. South African Airways biofuel collaboration

- 12. Australia biofuel roadmap
- 13. Southeast Asia smallhold farm initiative
- 14. UAE project with Etihad and Masdar
- 15. BIOjet Abu Dhabi with Etihad
- 16. Biofuel R&D in China
- 17. "Gutter oil" facility with COMAC
- 18. Hainan Airlines commercial flight
- 19. Japan biofuel roadmap



ICAO

UNITING AVIATION

E-GAP



Boeing committed to a sustainable future



ICAO Global Aviation Partnerships on Emissions Reductions (E-GAP) Seminar
ICAO Headquarters, Montréal, 16 to 17 September 2015

ENV2015