



Going further than ever before to raise aviation standards worldwide

The CAA International Group

www.caa.co.uk/international

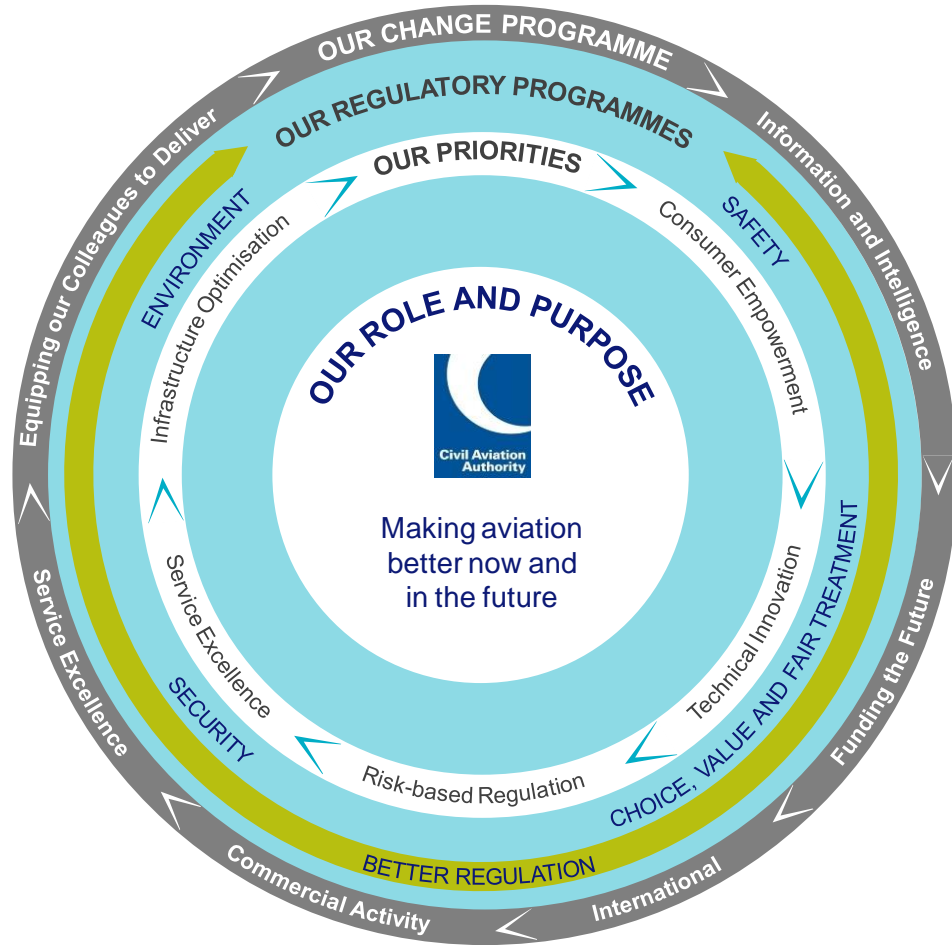
Infrastructure Optimisation

The Gatwick Airport Case Study

TOPICS

- Our Vision
- The UK CAA International Group
- Our Regulatory Scope
- AAA and Aerodromes
- Redesigning British Airspace / FAS
- Infrastructure Optimisation / Gatwick Airport Case Study

Our Vision

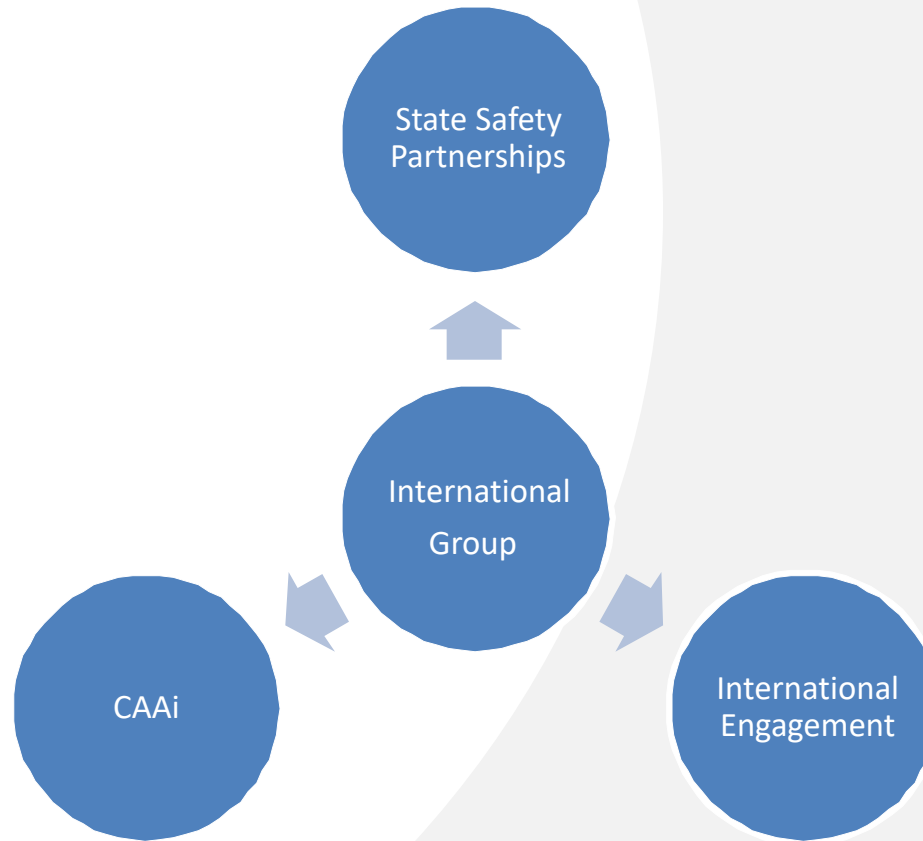


“As the UK’s specialist aviation regulator we passionately believe in making aviation better for those who choose to fly and those who do not.”

- CAA Vision 2020

International Group (IG)

“Our purpose in the IG is to support sustainable improvement in aviation standards across the globe.”



UK Civil Aviation

UK CAA regulates

50,000 Active professionals and private pilots	143 Licensed Aerodromes
2,350 air traffic controllers	15,000 licence issues and ratings every year
12,400 licensed aircraft engineers	19,989 registered aircrafts

Over **2 million** flights use
the UK airspace every year

370
International destinations
are served from UK
airports

Estimated **40%**
of the UK's total trade
value passed through UK
airports in 2017

UK airports: **285 million**
passengers in 2017 -
expected to increase to
465 million by 2030

Over **230,000**
people are employed in
the UK air transport and
aerospace sector

UK commercial fatal
accident rate per million
flying hours is **0** compared
to 0.12 globally

Airspace, ATM & Aerodromes (AAA)

AAA Section	Area of Impact	Scope of Impact
Air Traffic Management	<ul style="list-style-type: none"> • Regulation & oversight of NERL en-route operation. • 93 aerodrome ANSPs to national/ international requirements. • Regulation of around 110 Special Events. 	<ul style="list-style-type: none"> • <i>NATS Annual Turnover circa £900m handling 2.2m flights.</i> • <i>NERL Income circa £151m.</i> • <i>NATS Services Income circa £40m.</i> • <i>Potential significant adverse political and economic impacts of failure.</i>
Infrastructure	<ul style="list-style-type: none"> • Regulation of the Met Office Aviation Services. • Regulation & oversight of UK aviation spectrum. • Regulation of Aeronautical Information. 	<ul style="list-style-type: none"> • <i>Met Office services to aviation £29m/year.</i> • <i>Spectrum Release work - £10m contract with potential to realise £2bn from sale of Spectrum.</i>
Aerodromes	<ul style="list-style-type: none"> • Regulation & oversight of 84 licensed aerodromes. • Regulation & oversight of RFFS. 	<ul style="list-style-type: none"> • <i>192m passengers at Top 10 per year.</i> • <i>RFFS costs at Top 10 aerodromes £47m.</i> • <i>Turnover at Top 10 £3.8bn.</i>
Airspace Regulation	<ul style="list-style-type: none"> • UK airspace approval authority. • Regulation & oversight of IFP designers. • Temporary airspace co-ordination & notification. 	<ul style="list-style-type: none"> • <i>18 airspace changes/year ranging from £10m to £50k.</i> • <i>55 IFP designs/safeguarding approved/year.</i> • <i>60 temporary airspace/restrictions allocations/year.</i>
Regulatory Co-ordination	<ul style="list-style-type: none"> • Regulatory co-ordination within AAA. • Initial licenses, certifications & designation. • Airport developments. • ATC Incident investigation. • ATM Regulatory Assurance 	<ul style="list-style-type: none"> • <i>Value of some 230 airport development proposals = £2.5bn.</i> • <i>ATC incident investigation for 1k events per year.</i>

Aerodromes – CAA Oversight

Prescriptive vs. Performance-based

Prescriptive based environment

Regulations as
administrative controls

Rigid regulatory framework

- ✓ Inspections
- ✓ Audits

Objective: Regulatory compliance

Performance based environment

Regulations as
safety risk controls

Dynamic regulatory framework

- ✓ Data driven identification
- ✓ Prioritization of safety risks

Objective: Effective safety performance

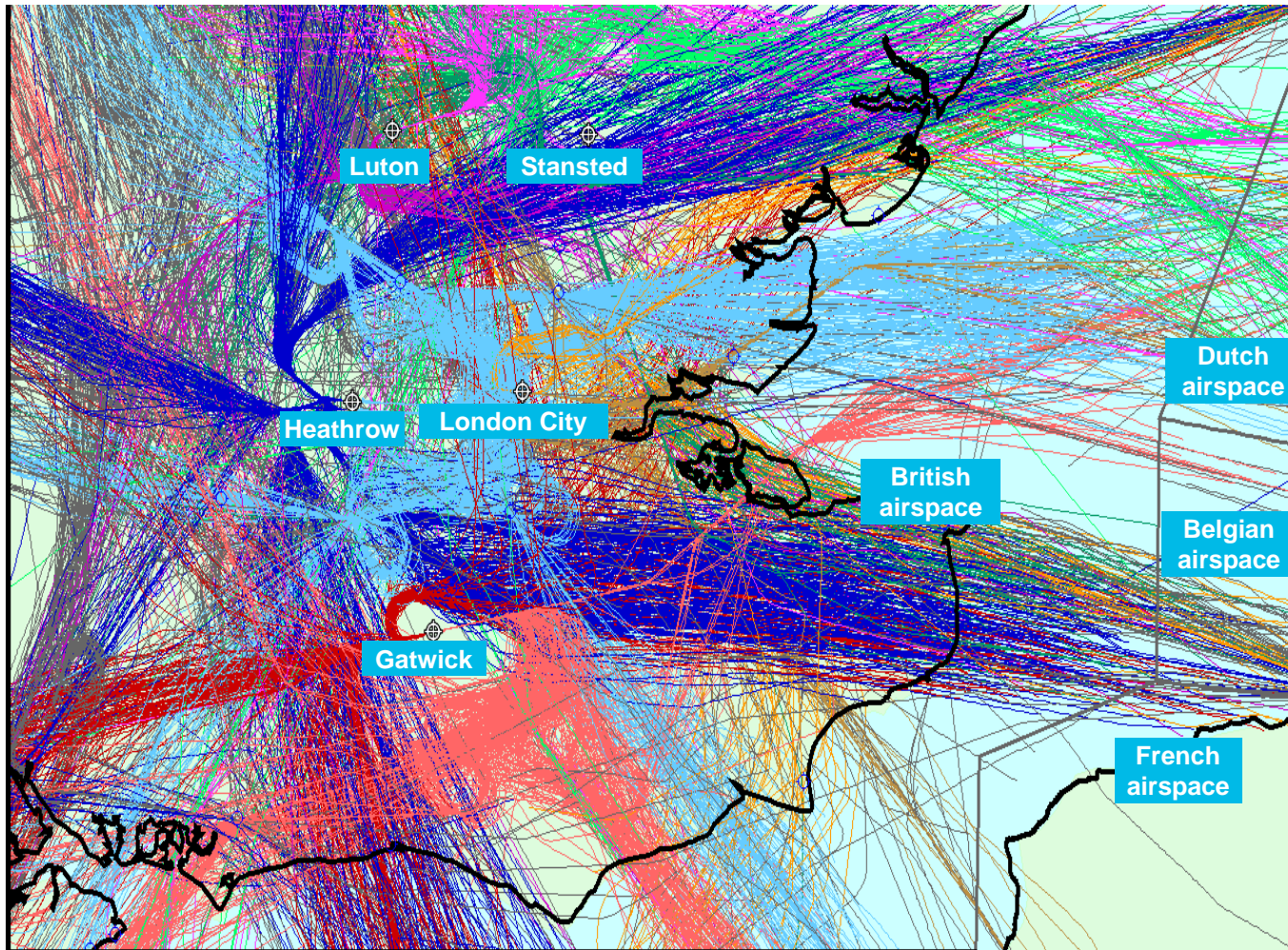
Redesigning British Airspace



Primary Objectives

- Effect continuous improvement in **safety**.
- Reduce congestion and improve **efficiency**.
- Deliver **environmental benefits** in line with DfT guidance.
- Implement the **Single European Sky** (SES) initiative.
- Meet our **international requirements**.
- Be responsive to **government policy**.
- Provide **flexibility** to enable future development.

Why?



South East of England
- All flights in one day

The UK's Future Airspace Strategy



Busiest Single Runway Airports – Top 2

Metric	Mumbai - India	Gatwick - UK
2017 Pax (Million)	48.5	45.5
Peak Movements per Hour	50	55
Hours of Operation	24	19



“Mumbai airport has complex and restricted operations due to what is effectively a single-runway system. Productivity from that runway is already high, with Mumbai achieving 46-50 hourly movements, approaching the global best practice level of 55. Hence further efficiency upside is limited,” *CAPA*



Gatwick Airport



The Drive to Fifty Five Initiative

Gatwick Airport

Identifying Root Causes

- Historical traffic profile – high **leisure** component (Charter Services)
- Seasonality creating **fragmentation** in the scheduling
- This created an **unappealing environment** for scheduled traffic to operate
- Legacy (grandfather) rights on **stand allocation**
- Runway/Taxiway **layout inefficiencies**
- Looking at other **sub-optimal processes**
- Arrivals and departures procedures / **flow management**

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Actions and Solutions

- Set up a dedicated **Lean 6 Sigma** team focused on process improvements
- Changes in **demand profile** required a new approach
- Appointment of a specialist **Slot Co-ordination Consultant** to work with the airlines
- Resulting in turning historic **7 week fragments into 22 weeks**
- **Stand allocation** responsibility **taken in-house** by the airport operator
- This led to **optimised stand allocation** and increased efficiencies
- Stand allocator (from airport operations) co-located with NATS in the ATC tower to **streamline the process**

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Actions and Solutions

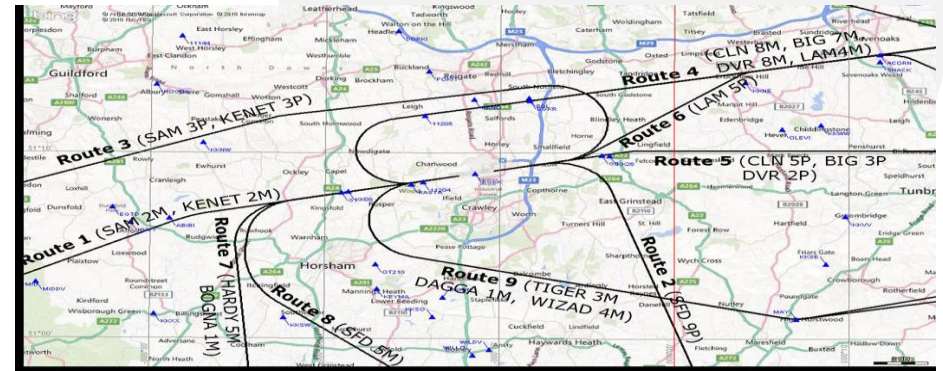
- Optimising positions of **RETs, RATs and Holding Points**
- **Enhanced training programmes** delivered to support improved operational efficiencies
- Implementation of **Airport Collaborative Decision Making (A-CDM)** and **pro-active stakeholder engagement**



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Actions and Solutions

- Redesign of RNAV-1 departure routes as part of the London Airspace Master Plan
- Deployment of **Departure Manager** platform to
 - Increase airport capacity
 - Improve predictability and
 - Improve operational efficiency
- Planned **eTBS** implementation to reduce disruption during strong headwinds



Gatwick Airport



The Drive to Fifty Five Initiative

The above initiative and other supporting activity has resulted in a maximum runway delivery of **58 movements** in a given hour from a declared capacity of **55 movements** and saw the **busiest day** movements increase from **904 in the 2014** season to **948 in the 2016** season - an overall **increase of 4.8%**.

Collaborative Relationship with Industry



- Government **setting policy** and agenda for change and improvements
- Industry **driving change** and infrastructure optimisation
- UK CAA **collaborates and facilitates**

Questions ?



UK Civil Aviation Authority
International

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