

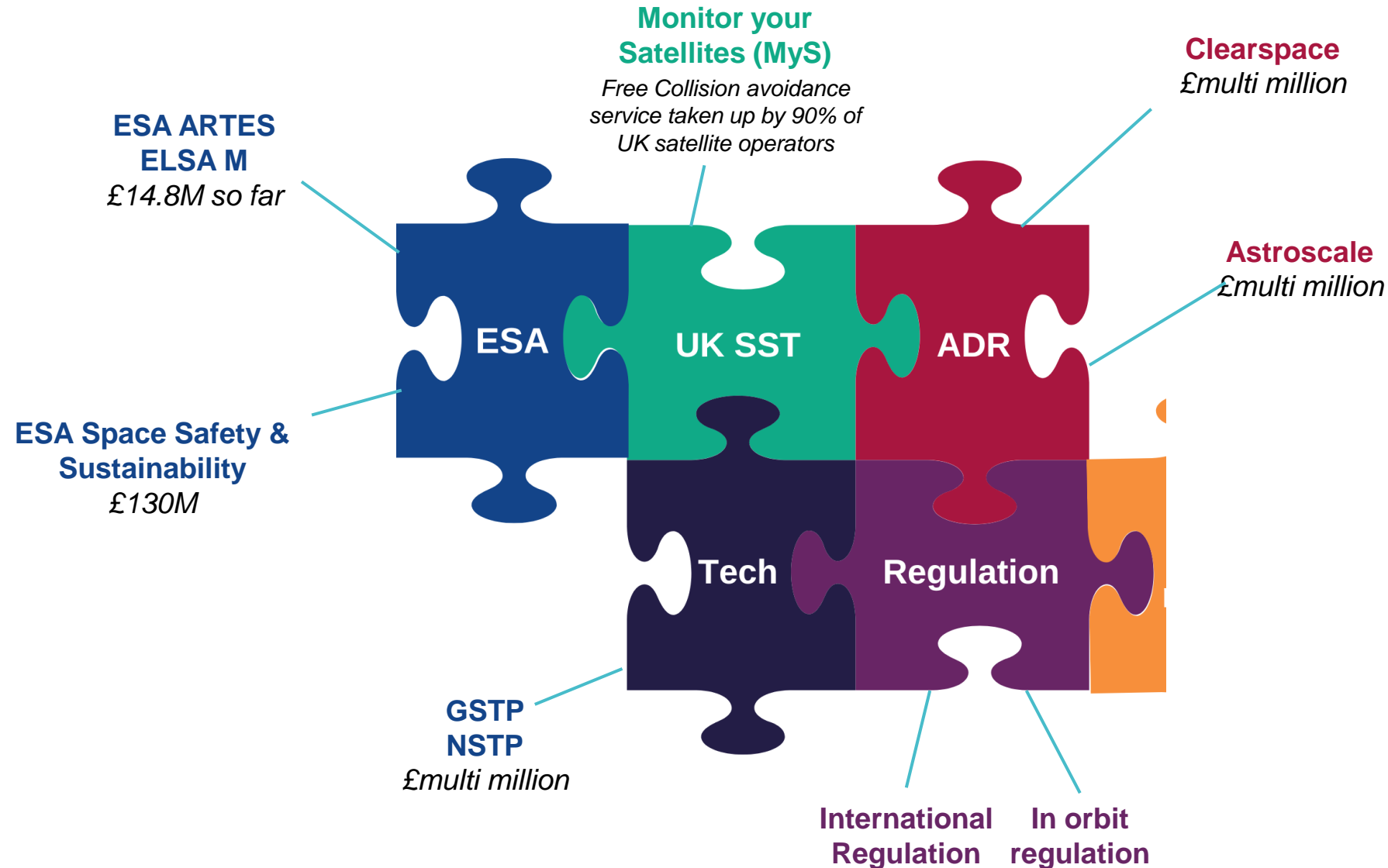
UK Space Agency Space Surveillance and Tracking (SST) Overview

Dr. Adam E. White
Senior Orbital Analyst
UK Space Agency

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UK Space Agency: £175M commitment to a sustainable space





Across -
Government



The Science Inside

International
collaboration



Industry &
academia

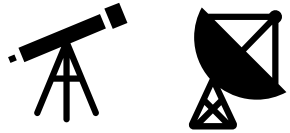
Satellite
Operators



Inter-Agency Space Debris Coordination Committee



UK's Civil SST Operational Service



Observe/Data

- US Space-Track and other US data
- **National Sensors**
- Commercial contracts with **national and international sensor providers**
- UK operator ephemeris



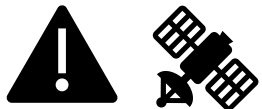
Analyse/Data Processing

- **Specialist SST/SSA/SDA software** – COTS packages and Bespoke software
- Developing software system with **SDA System**



Analysis/ Knowledge

- Analysis of all types of space events relevant to HMG
- **Focus on CA, FRAG, RE, COMP**
- Civil and military Orbital Analysts **7 days a week, 365 days a year**
- Monitor between **4,000 UK conjunctions each month**



Alert/ “So What?”

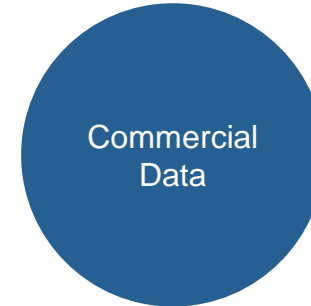
- **Reporting to government and international partners:** conjunctions, re-entry, fragmentation and other space events
- Reporting to industry: conjunctions via **Monitor Your Satellites**

UK SST Operational Capability - Observe

Objective: Maintain and develop UK global SST sensor network and access to global data networks



Observe



Commercial providers:

- LeoLabs
- Slingshot
- Raytheon

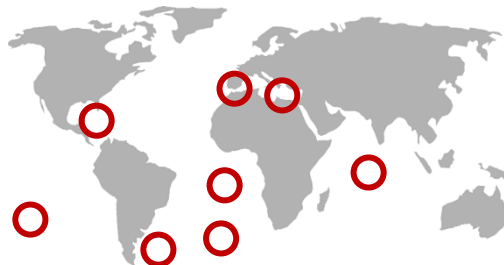
UK civil sensors:

- STFC's CASTR & COATS NERC's
- GEOF & laser ranger
- RAF Flyingdales



1.4 million observation tracks from civil and commercial sensors

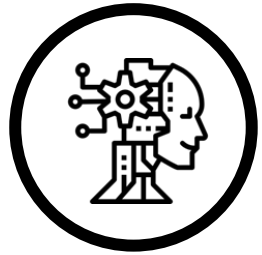
● Telescope
● Radar
● Laser



Strategic placement to fill gaps in worldwide coverage;
UK positioning & co-operation with international partners
and allies.

UK SST Operational Capability - Analyse

Objective: Maintain and develop SST systems and processes to analyse and interpret sensor data



Analyse

Team of 6 orbital analysts operating 365 days of the year

UK Data

Other Data



Orbital Analysis

Other SDA Software



UK Gov + partners alerts and response

Monitor Your Satellites

Combined Civilian Military


- **Bespoke analyst software**
- **Aurora:** SDA software capability

40,801 events monitored in 2022 resulting in:

- **60** re-entry incident reports
- **30** conjunction incident reports
- **3** fragmentation incident reports

Monitor Your Satellites (MYS)

- Central system to notify UK satellite owner / operators about upcoming high probability collision events
- Easy to understand and high-quality data to users via an online platform
- Currently a free operational **UK Service with 90% of UK active satellites registered but still developing based on user feedback**
- Collates all **conjunction information into one place**
 - Conjunction data messages, object data, ephemeris
- **Shares additional analysis** by UKSA Orbital Analysts
- API layer available

GOV.UK

Monitor your satellites

[Events](#) [Satellites](#) [Account](#) [Sign out](#)

BETA

This is a new service – your [feedback](#) will help us to improve it.

Upcoming conjunction events

This table contains all events affecting your satellites.

Find a conjunction event:

Search

Event information		Objects		Miss distance (m)		Probability of collision	
Your interest	Event ID	Time of closest approach (UTC)	Primary	Secondary	Mean radial	Total	Space-Track CDM
HIGH	zyzkox-agoiohx-vdldm	13/06/2022 14:57:15	ONEWEB-0393	SL-12 R/B(2)	191.4	2329	1.6096e-6
	hyjod-kxkrod-rxoxm	13/06/2022 14:57:37	ONEWEB-0376	COSMOS 1275 DEB	1083.7	43589	0

GOV.UK Monitor your satellites
Events Satellites Account Sign out

BETA This is a new service – your [feedback](#) will help us to improve it.

UK-licensed satellites

Find a satellite:
 Search

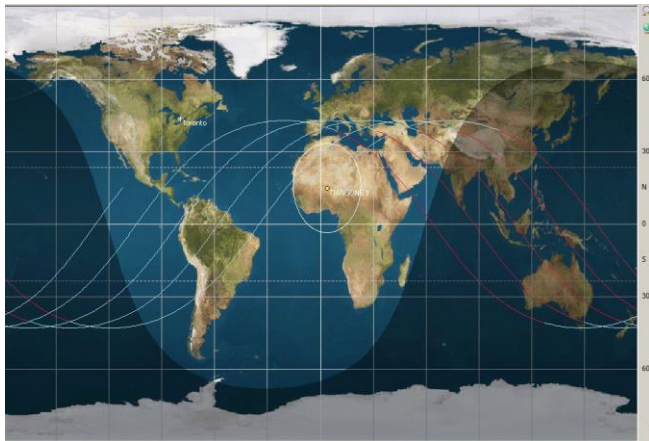
Common name	NORAD ID	International designator	Upcoming known conjunction events
Q3B FM3	40079	2014-038A	0
Q3B FM19	44113	2019-020B	0
SKYNET 4E	25639	1999-009B	0
Q3B FM10	40348	2014-083A	0
SES 2	37809	2011-049A	0
Q3B FM14	43233	2018-024C	0



Collaboration is Key



Inter-Agency Space Debris Coordination Committee



- We have common aims across civil and military, internationally, and with industry – to operate **safely, securely** and **responsibly** in the space environment
- Active partner in develop and demonstrating “**norms of space behaviour**”
- **Data sharing** with international **partners** is **essential** to adapt to changing orbital environment
- **Closer working relationships with operators** will help overcome challenges
- Working with industry and academia to **find new market opportunities enabled by space surveillance data and data processing capabilities**

Questions?



Adam White (Direct enquiries)
adam.white2@ukspaceagency.gov.uk

SST enquiry Inbox
SST@ukspaceagency.gov.uk