

695th Lord Mayor's Space Protection Initiative

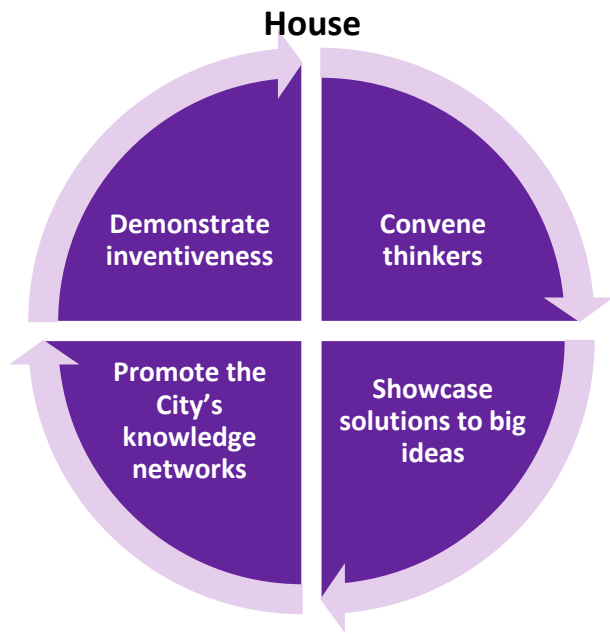
October 2024

Alderman Professor Michael Mainelli
The Rt Hon the Lord Mayor of London 2023-2024
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Alderman Professor Michael Mainelli – Mayoral Priorities – 2023/2024
 “Connect To Prosper”

The City of London is the world’s most successful concentration of knowledge connections. More than 40 learned societies, 70 universities, and 130 research institutes surround the City. Of 24,000 businesses, nearly 8,000 are professional, scientific and technical enterprises. **Connect To Prosper** will bring together thought leaders from the **scientific, academic, and business worlds** to demonstrate how the City’s strengths are in **solving global challenges**.

Our Knowledge Miles – The World’s Coffee House



Convene: *Connect To Prosper* will bring together thought leaders from the scientific, academic and business worlds through Coffee Colloquies on Sustainable Development Goals and other topics and set-piece dinners. A Lord Mayor’s Knowledge Miles Lecture series will draw on expertise within the Livery companies and beyond to showcase the City’s knowledge and expertise in identifying and meeting new global opportunities.

Connect To Prosper activities are split in to three pillars matched against the UN Sustainable Development Goals (SDGs). These represent the major challenges facing the world, which the City of London can help to answer.

	Posterity & Planet (Biosphere SDGs)		People & Possibility (Society SDGs)		Prosperity & Productivity (Economy SDGs)	
Global	COP 28	Net Zero Delivery Summit Green Pact	Knowledge Miles webinar series	International LMS	Global Investment Futures	Tech showcase
Local	Biodiversity Corridors	University Partnerships	SDG Coffee Colloquies	LM Royal Mathematical School Bursary	VeraCity App	Ethical AI
Demonstrate	Exp: Biodiversity corridors	Exp: Bicycle wheel air filters	Exp: Galenos & MQ Mental Health	Exp: Monument tethered drones	Exp: Time Dilation	Exp: Autonomous boats

Connect To Prosper will emphasise the City’s Strengths:

- We are connected – The City of London is the world’s most successful concentration of knowledge connections both locally and globally.
- We have major talent clusters – Knowledge-based businesses thrive when they cluster and have access to talented people, financing and markets. The Mayoral year will highlight this in line with the Competitiveness Strategy.
- Things happen here – The Mayoral year will showcase the City’s communities’ inventiveness through demonstrations and experimentation.

Our Knowledge Miles

The City is made up of multiple, diverse miles, all co-existing and collaborating within our ‘Square Mile’.

The World’s Coffee House

Where connections between people, firms and institutions develop and grow, leading to ideas and inventions that solve global problems.



Space – The Essential Frontier

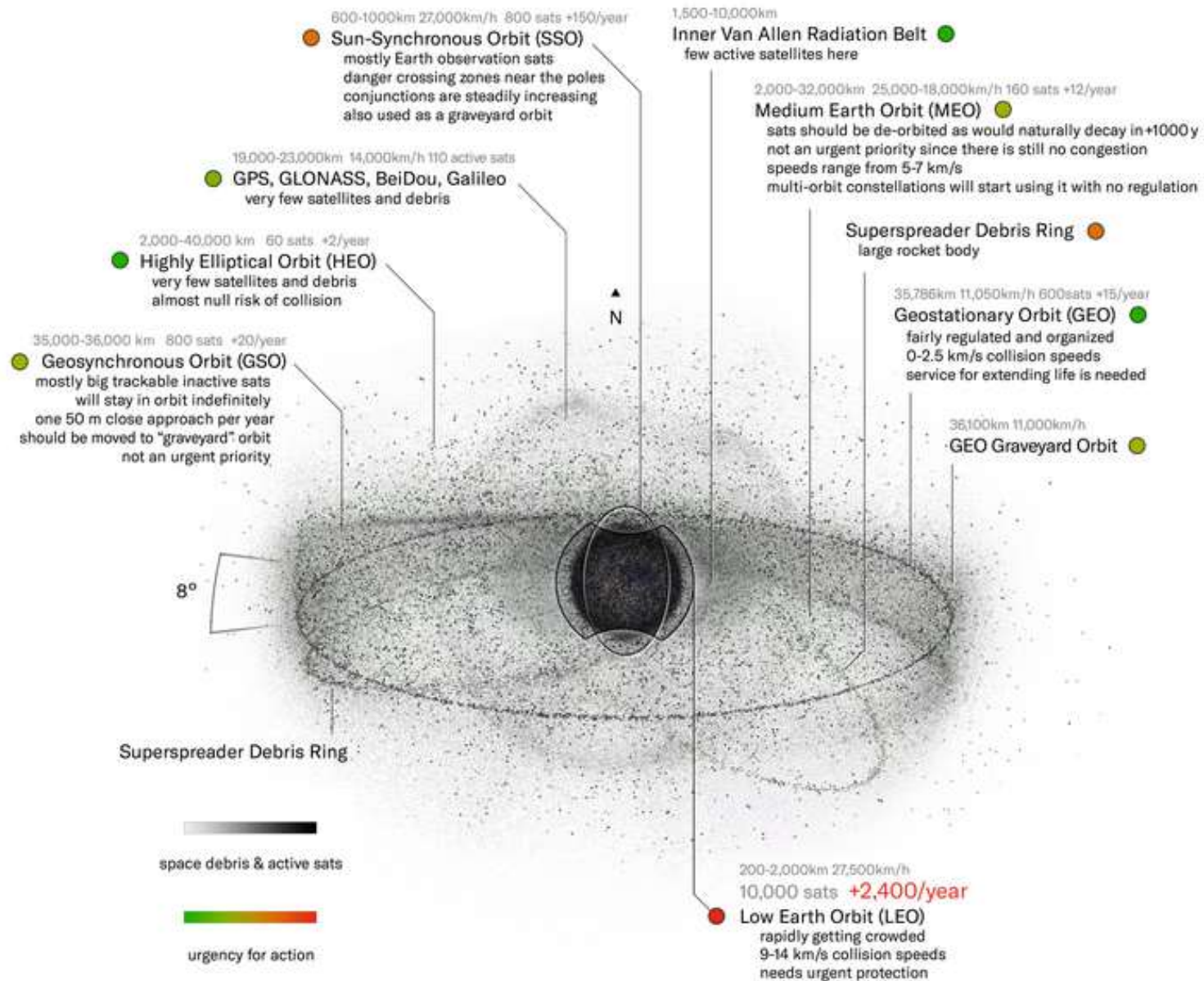
Helping The World Make Better Decisions

- 17 Sustainable Development Goals – 65 out of 169 of the sub-goals (38.5%) cannot be met without space for positioning, telemetry, and observation
- Shipping and aviation – 90% of global trade, 10.7% of global gdp
- Defence – ‘trigger happy’ if you can’t see what the neighbours are doing
- Investment - \$47bn of private capital since 2015 (PwC) not going to be sent up ‘to be shredded’



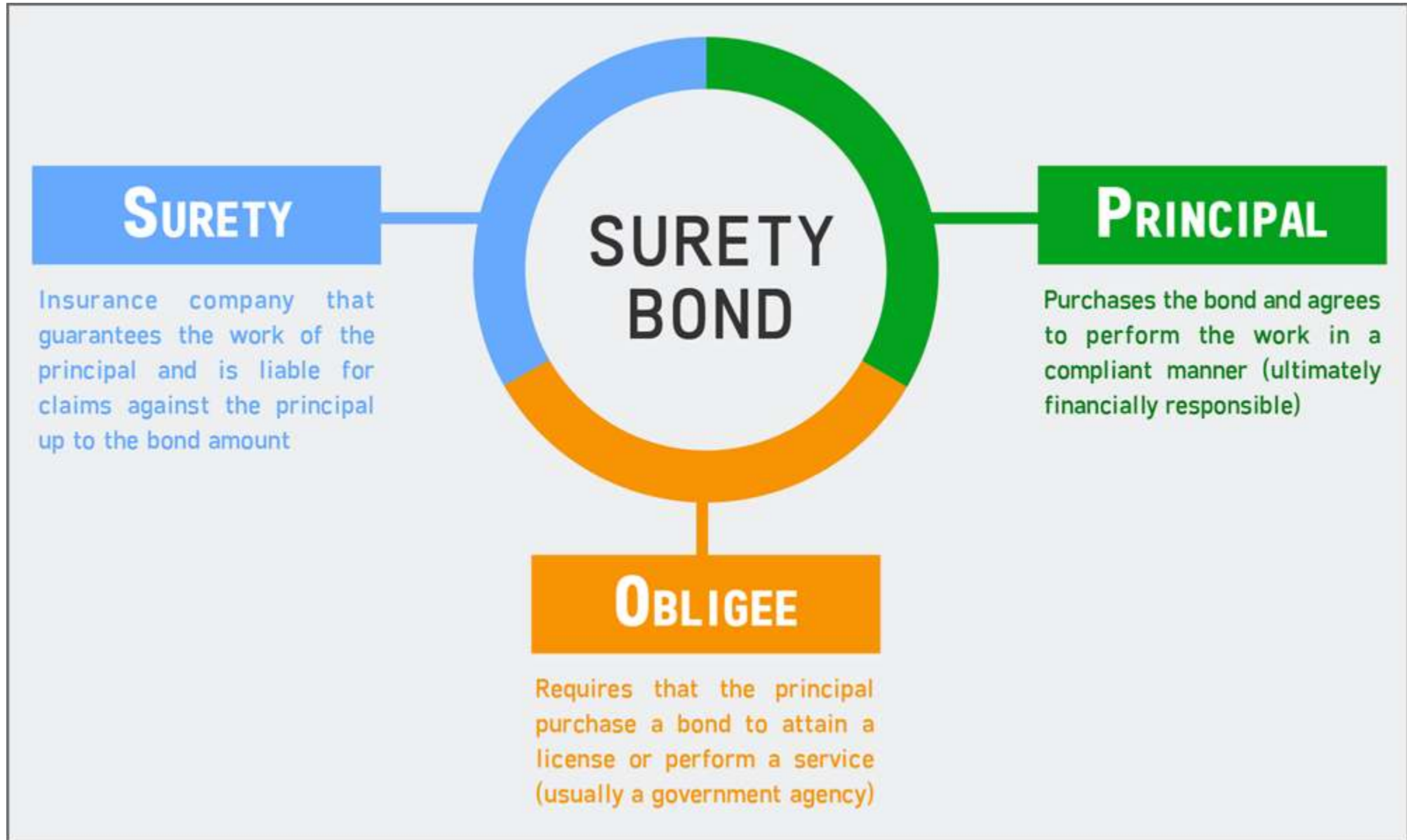


The Problem





Surety Bonds





Space Debris Removal Insurance Bonds (SPADRIBs)

A performance bond is a surety bond issued by an insurance company or a bank to guarantee satisfactory completion of a project by a contractor. The underwriter guarantees an amount equal to the decommissioning sum in return for an arrangement fee and premium. Performance bonds are used in other industries that operate under risk-laden conditions in extreme environments, such as offshore wind, maritime, and mining. In these industries, performance bonds are applied to decommissioning operational equipment at end-of-life and are often coupled with other incentives, such as subsidies, levies, and tax incentives, among others. The trigger of a typical performance bond is twofold — an operational issue (which in the case of SDRBs would be the failure of the satellite), followed by the financial inability of the principal to remedy the issue (in practice this means the insolvency of the principal).



Timeline

- 5 October 2023 - “[The 695th Lord Mayor’s Space Protection Initiative](#)” launched at the International Astronautical Congress (IAC 2023) of the International Astronautical Foundation in Azerbaijan - [In-Orbit Servicing & Insurance Markets: A Symbiotic Approach](#)
- 5 December 2023 - [Coffee colloquy on space debris](#) at Mansion House
- 3 January 2024 – Invitation to treat letter from Lloyd’s reinsurance broker offering up to US\$500m per operator backed by six global underwriters
- 17 January 2024 – WEF at Davos, leading to this [April report](#) – “... insurance of satellites and space systems will continue to play a critical role”
- 5 June 2024 - SPADRIBs at Lord Mayor’s Science & Innovation banquet - Professor Manahel Thabet launched the Commonwealth Space Collaboration Initiative, and the publication of “[CommonSpace: Making Space Work For All](#)”
- 6 June 2024 - World Economic Forum workshop at Mansion House, “[Financial Space Debris Mechanisms](#)”
- October 2024 – Commonwealth Heads of Government Meeting (CHOGM), Samoa
- November 2024 – United Nations General Assembly





Objective

What's our target? We'd like to get the G7/G20 to make purchasing such SPADRIBs, or similar, a condition of launch. [Our objective is to get the G7/G20 to announce that "SPADRIBs will be a condition of launch from 202X"](#).

"It is our intention that governments will require proof of adequate financial means for retiring unused satellite and launch vehicle materials before permitting launch, orbit, registration, or ground station use."





Progress – Insurance Industry

The private sector has offered sufficient financial capacity. Six major underwriters in the global insurance market have put forward an ‘Invitation to Treat’ for up to US\$500 million per operator, so long as:

- “a spacecraft company clearly demonstrates it can de-orbit third party space debris”
- “the agencies regulating space launch make Spadribs mandatory”



Progress - Space Industry

- Antony Barrow, Chairman, Facet Underwriting
- Catherine Doldirina, General Counsel, D-Orbit
- Chris Phillips, Chairman, Shetland Space Centre / SaxaVord – UK Space Port
- Dava Newman, Director of MIT Media Lab / Apollo Programme Professor
- Ehsan Razavizadeh, Honorary Visiting Fellow of the London Space Innovation Centre, City, University of London
- Kostas Raftopolous, Managing Director, Axion Capital
- Mark Wheatley, Director, DWC Space
- Nick Shave, Managing Director, Astroscale UK
- Nikolai Khlystov, Lead for Space, World Economic Forum
- Rob Desborough, General Partner, Seraphim Space
- Sam Adlen, Co-CEO, Space Solar
- Seumas Kerr CBE, Managing Director, The D Group



Progress - Governments

56 nations of the Commonwealth





Royal Astra Carta Initiative

In 2022, The King (as The Prince of Wales) announced an ambition for his Sustainable Markets Initiative to create an 'Astra Carta' to act as a framework to inspire sustainability across the space industry.

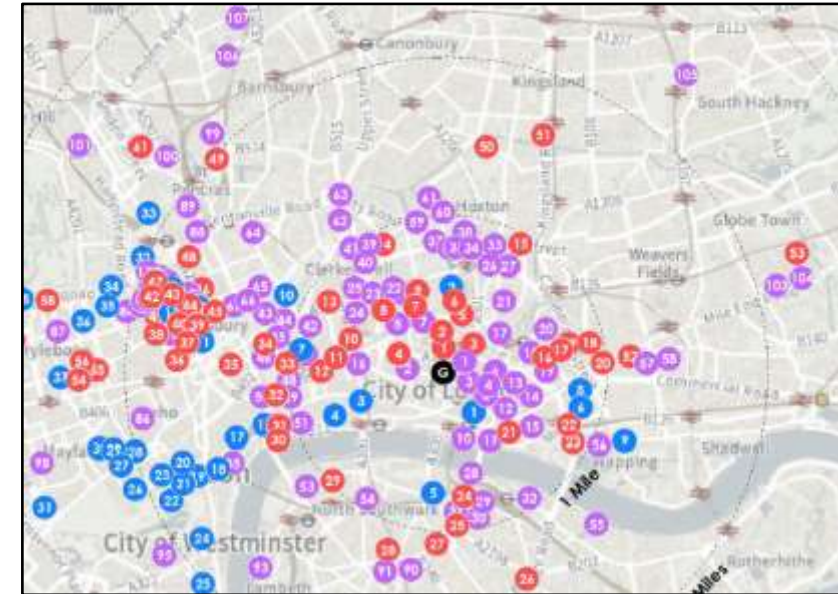
The Astra Carta (represented by its seal, right, launched in June 2023) aims to convene the private sector in creating and accelerating sustainable practices across the global space industry. It also recognises the unique role that space can play in creating a more sustainable future on Earth and the need for the space industry to consider environmental and sustainability impacts beyond our planet. Its ambition encourages a focus on placing sustainability at the core of space activity.







Wider Awareness

- Einstein’s two clock time dilation relativity experiment using NPL nano-clocks at 22 Bishopsgate & St Paul’s Cathedral
- Monument aerodynamics and light experiments



*“40 learned societies,
70 universities,
and 130 research institutes”*

Date	Association	Title	Speaker(s)	Affiliation	Details
27 June 2024, 15:00 - 15:45	 European Space Agency	Waste Of Space: The Problem With Space Debris And The Challenges And Opportunities Associated With Solving It	Graham Turnock	European Space Agency	Webinar
12 June 2024, 11:00 - 11:45		Clear Skies Ahead: Funding Space Debris Clean-up Through An Offset Market	Matthew Wills	Sustain Space Ltd	Webinar



Look Ahead

The UK, in accordance with the [National Space Strategy](#), is ramping up its efforts in space sustainability. This includes [two Active Debris Removal Phase B mission studies](#) which were awarded to Astroscale and ClearSpace in September 2022 (totalling £4 million). These will help the UK Space Agency decide which mission concept to take forward to a fully-fledged design and launch phase, culminating in 2026 with a demonstration of the nation's capability to rendezvous, dock with, and deorbit two defunct UK satellites.



Credit: ClearSpace



Want To Get Involved?

- Letter of support always welcome
- Time to start modelling