



**We help
Earth benefit
from space**

Swedish Space Corporation

Your space partner in the Arctic

Guy Wilkinson

14 June 2023



Mission

We help Earth
benefit from space

Vision

The leading global provider of
sustainable space services

Business areas

SSC provides sustainable space services on a global market



Test & Launch Services



Satellite Ground Network Services



Spacecraft Operations & Engineering Services



Data Analytics



SSC's public mission

SSC's commercial mission

A Global Game Change Through Space

A daily recognised trustable situation picture of the state of the planet



Examples:

- Global Sustainability; *Supports All 17 UN sustainability goals*
- Managing Climate Change
- Regional & Global Development
- Forestry
- Agriculture
- Maritime & Fishery
- Maritime Security
- Ocean Ecology
- Carboxide Emissions
- Draughts, Water Supply
- Crises Management
- Societal Planning
- Migration
- Nature & Environment
- Ecological Diversity
- Security & Defence
- Health
- Transportation
- Energy
- Research & Technology
- Ice melting

SSC Worldwide



600 Employees
30 Nationalities
20 Locations
10 Countries

SOME OF OUR CUSTOMERS

MOST LARGE SPACE ACTORS IN THE WORLD





Science & Launch Services

- Sounding Rockets
- Stratospheric Balloons
- Autonomous Systems
- Ground Instruments
- Payloads & Systems
- Scientific support
- Test & Validation
- Software Development
- Spaceport and Small Satellite Launches

Esrange

The most versatile space center in the world



Twice the size
of Luxembourg
or Rhode Island

5200 km²
ground space





SSC and the space development

- 1. SmallSat Express**
A European launch facility for small satellites
- 2. Testbed**
For advanced space technology testing
- 3. Satellite communication services**
Optimized for communication with small satellite constellations in low Earth orbits



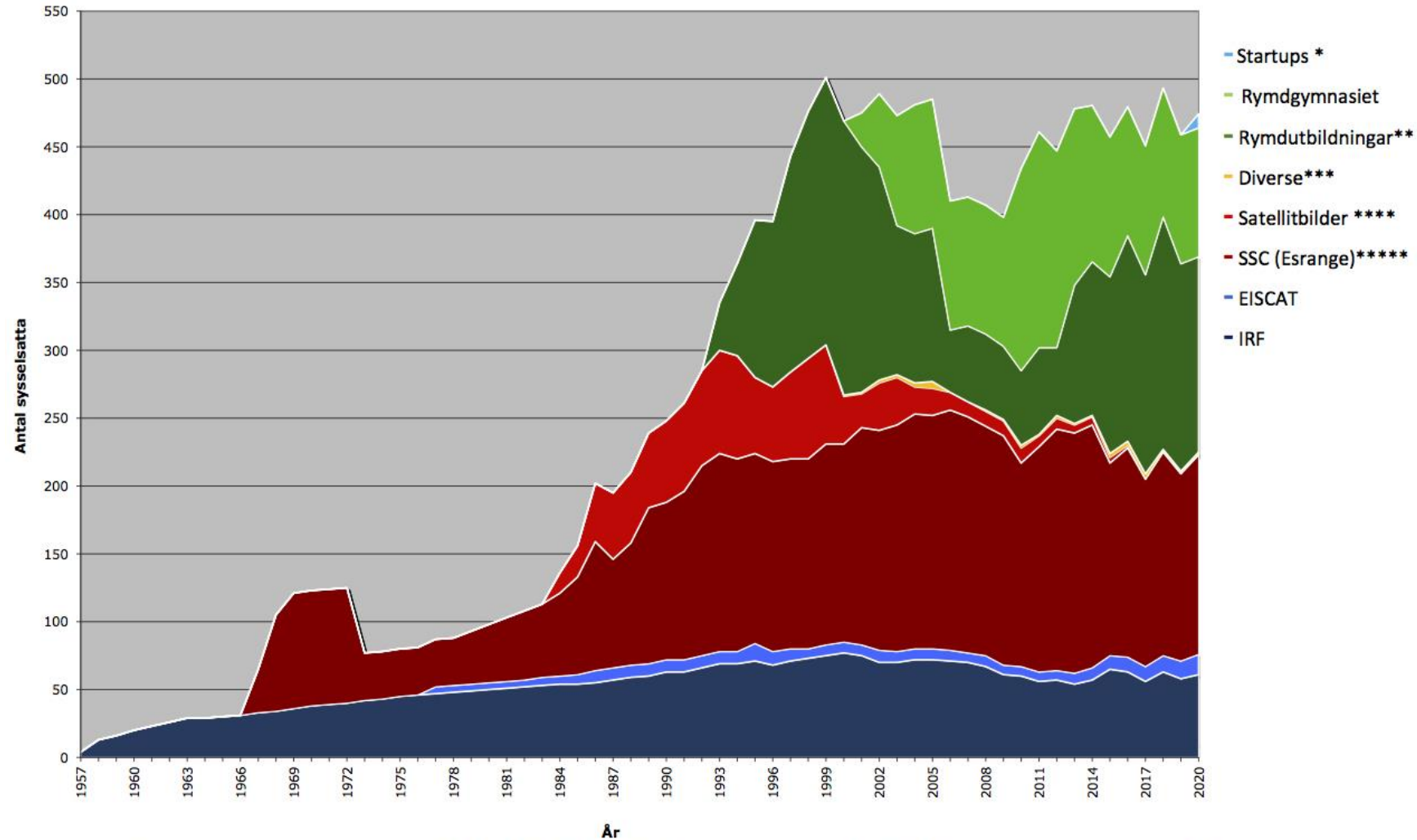
Inauguration Spaceport Estringe

A manifestation of Estringe and European Space Capability for Competitiveness, Security, Green Transition and rule of law

Kiruna Space Sector Employment



Rymdverksamhet i Kiruna 1957-2020 (1 januari 2021)



Verksamheter som levererat data till denna undersökning har varierat över tid: * Rymdrelaterade företag som etablerat sig i Kiruna under år 2020, ** Studenter & anställda LTU och UmU,*** Diverse (Spaceport Sweden, Kiruna Space, LTU Business, forskningsturism mm), **** Lantmäteriet, Metria, Satellus, Satellitbild och Miljödatacenter, ***** SSC (Esrange) & ESA:s markstation (Salmijärvi);



Satellite Ground Station Services



SSC CONNECT

Your link between Earth and Space

SSC CONNECT is a portfolio of fully managed Ground Station Services that enable you to efficiently control your operations and receive payload data in near real time.

It provides global and reliable communication access to your spacecraft anytime, anywhere.

ADVANCED. SECURE. TO LUNAR AND BEYOND.



Satellite Ground Network Services

- Launch Support Services
- On Orbit Services
- Hosting Services
- Satellite & Network Operations
- Gateway Services
- Teleport & Media Services
- SSC NewSpace network
- Data Handling & Processing
- Consulting & Mission Engineering

SSC Connect global ground station network



Global connectivity for space operations

MANAGING
125
ANTENNAS

AT
10
SSC
GROUND
STATIONS

+
9
PARTNER
STATIONS



200 EMPLOYEES

30 NATIONALITIES

20 LOCATIONS

10 COUNTRIES



Three SSC Arctic Sites

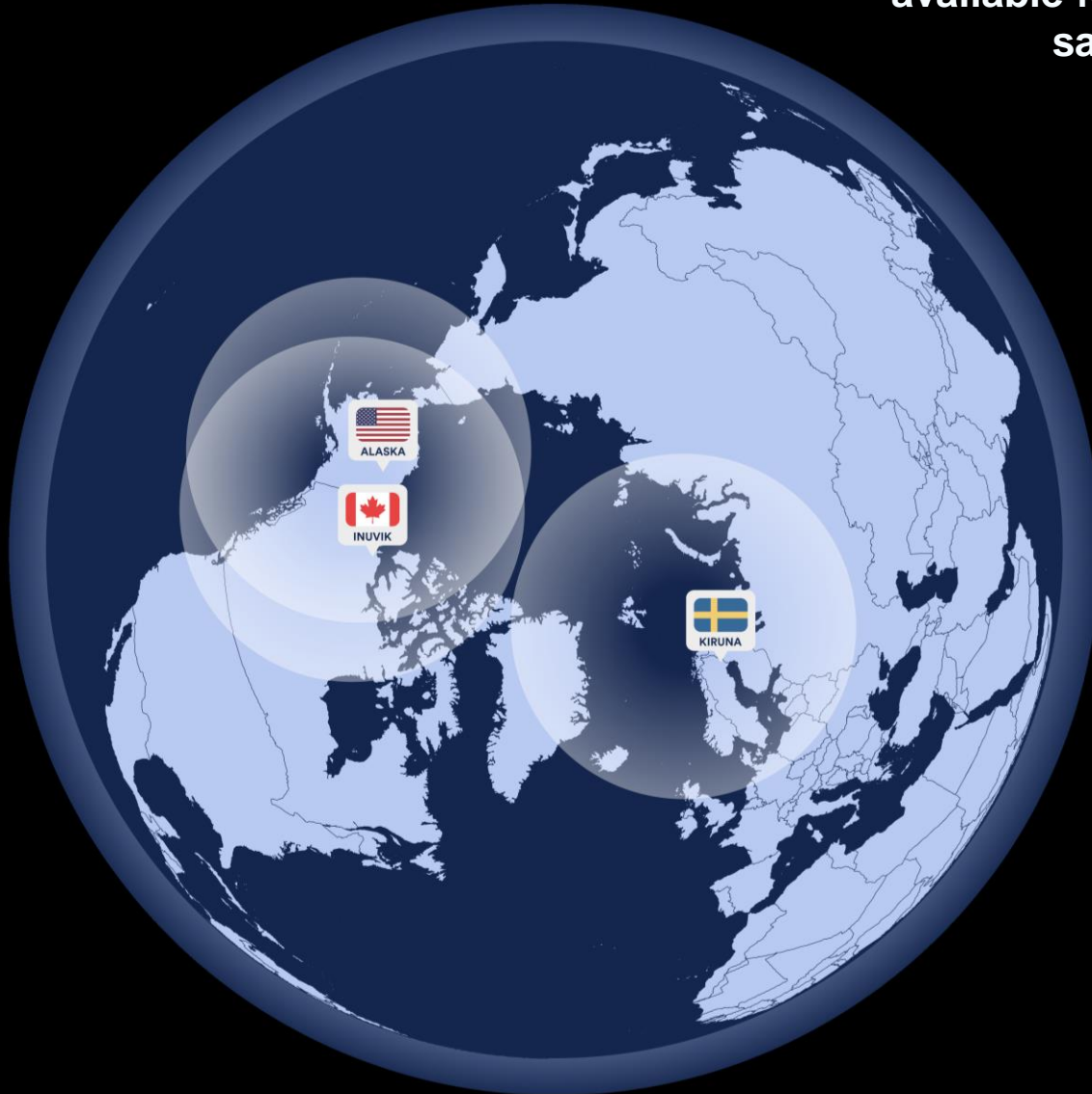
Esrangle, 40km form Kiruna in Northern Sweden - 67.9 degN

ISSF, Inuvik, NWT, Canada – 68.9 degN

North Pole, Alaska USA – 64.8 degN



Best arctic coverage
available for LEO
satellites



SSC CONNECT Arctic Stations' Combinations

Enabling unmatched data download opportunities on every orbit for LEO polar satellites regardless of the orbit altitude

- Longer contact time on each orbit
- Reduced risk of radio frequency interference
- Increased availability and redundancy
- Scalability of mission needs and volume maximization with highly available Ka-band ground station services
- Reduced latency
- Cost efficient



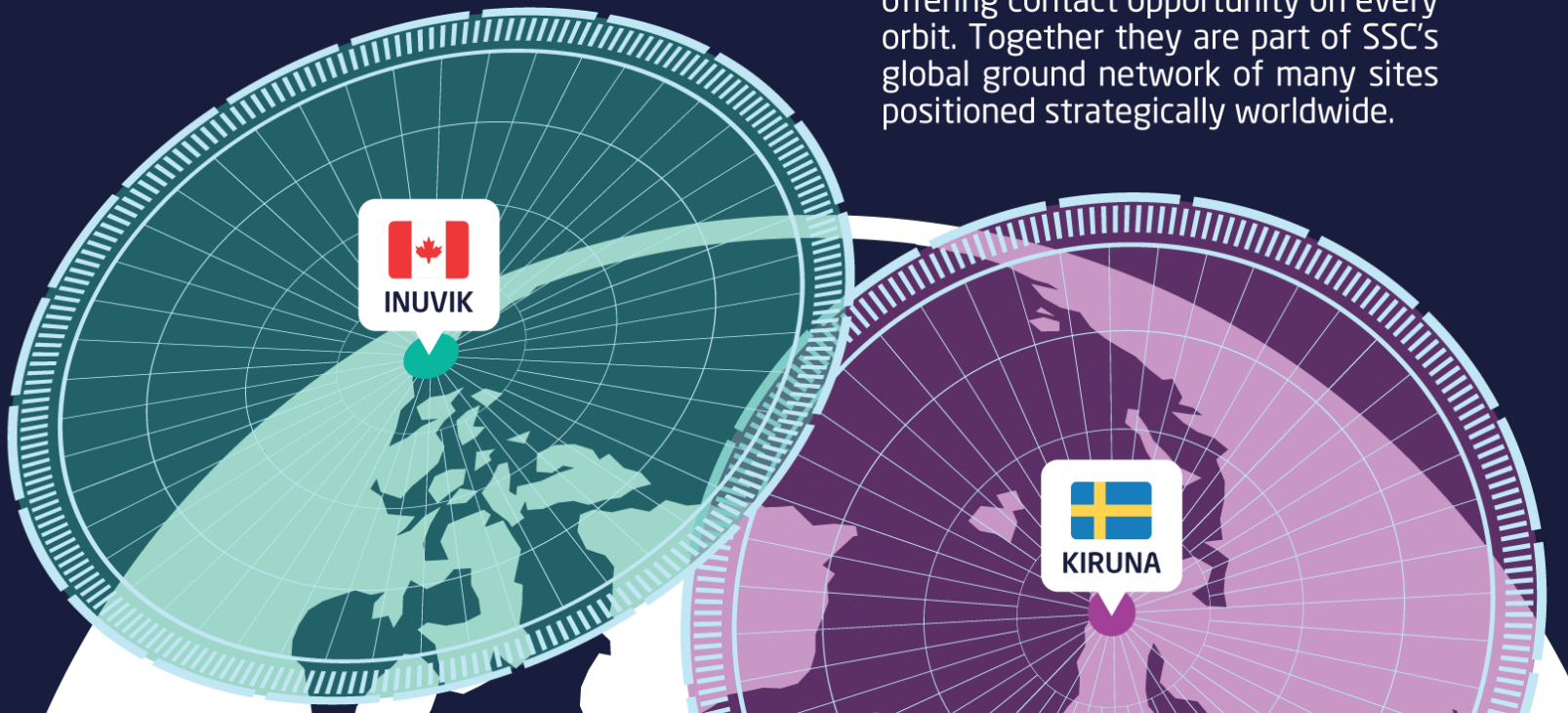
INUVIK SATELLITE STATION FACILITY

A KEY NODE FOR UNMATCHED ARCTIC COVERAGE

THE KINUVIK SOLUTION

provides the best arctic coverage available for LEO satellites.

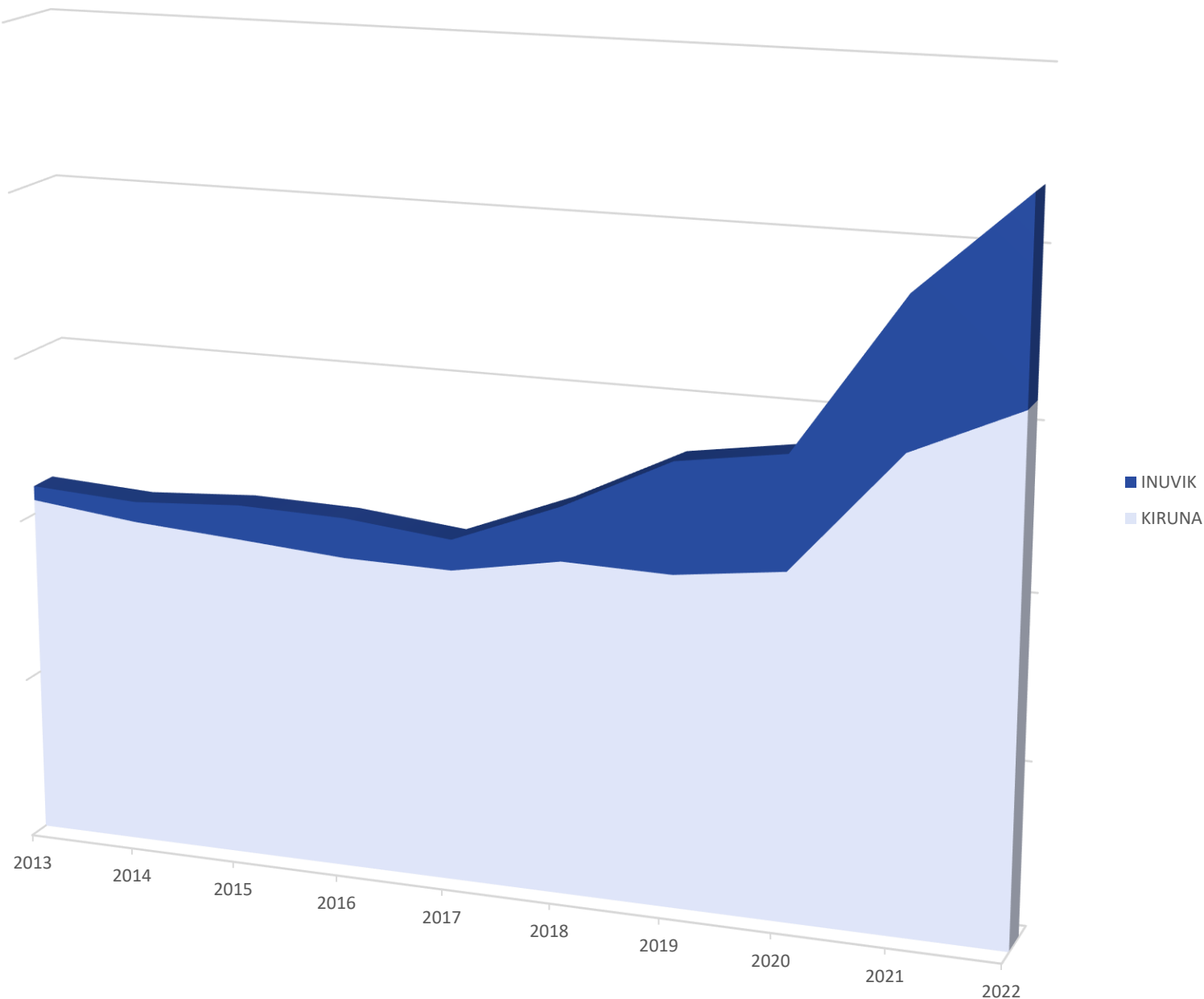
SSC operates both stations as one site offering contact opportunity on every orbit. Together they are part of SSC's global ground network of many sites positioned strategically worldwide.



BUILDING THE WORLD'S MOST ADVANCED POLAR CONNECTIVITY

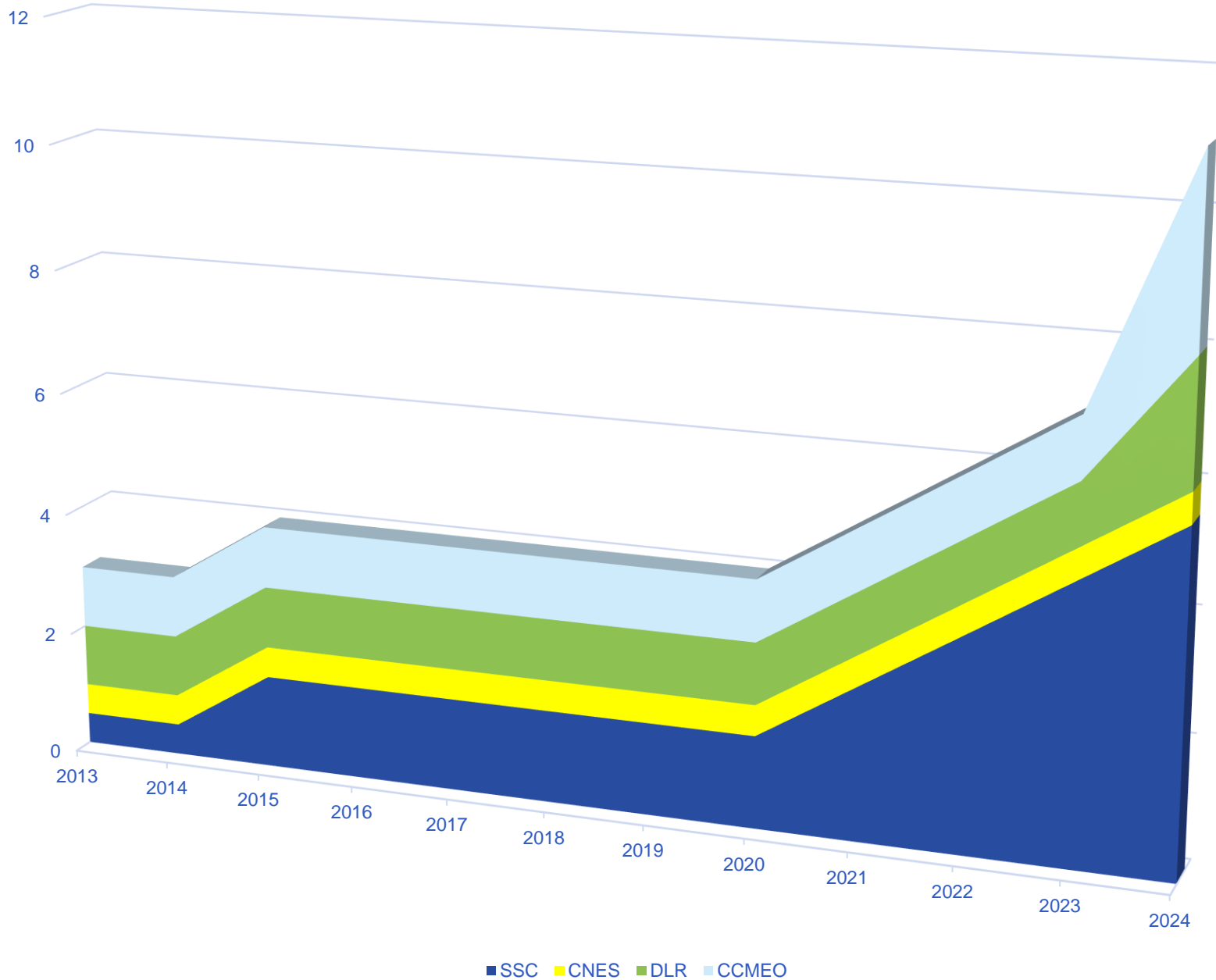
- 2009: First antenna operational at ISSF
- Collaboration with CCMEQ, CNES and DLR

"KINUVIK" - Loading



BUILDING THE WORLD'S MOST ADVANCED POLAR CONNECTIVITY

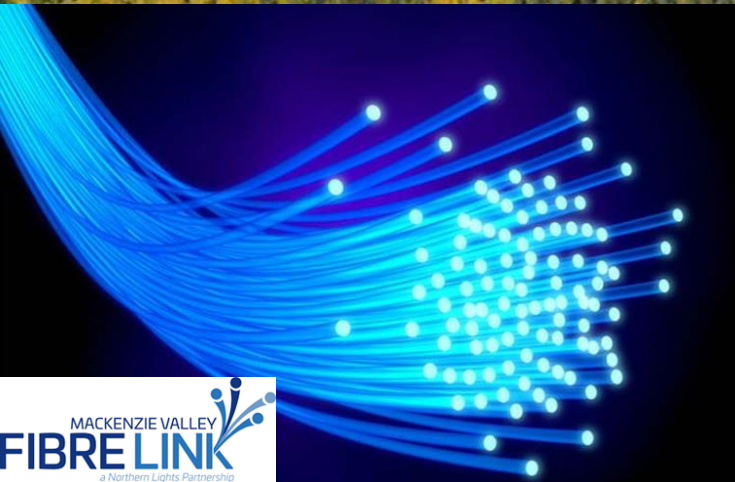
- Increased capacity utilization as demand increases



BUILDING THE WORLD'S MOST ADVANCED POLAR CONNECTIVITY

- Number of SSC antennas has increased significantly in recent years with market acceptance of “Kinuvik” concept

Inuvik Satellite Station Facility



Local partners

Inuvik



McDonald Bros. Electric Ltd.



TUNDRA DRILLING SERVICES



Local Partners

Yellowknife and rest of Canada



The Dempster Fibre Project will ensure reliable internet service for the Yukon and the North.

About the project

The Government of Yukon is currently building an 800-kilometre fibre optic line along the Dempster Highway from Dawson City, Yukon, to Inuvik, Northwest Territories.

This project, known as the Dempster Fibre Project, will connect to the existing Mackenzie Valley Fibre Link in Inuvik. The new line will create a 4,000-kilometre network, offering communities along this loop a backup line in the event of a service disruption and ensuring they have more reliable internet and cell phone services.

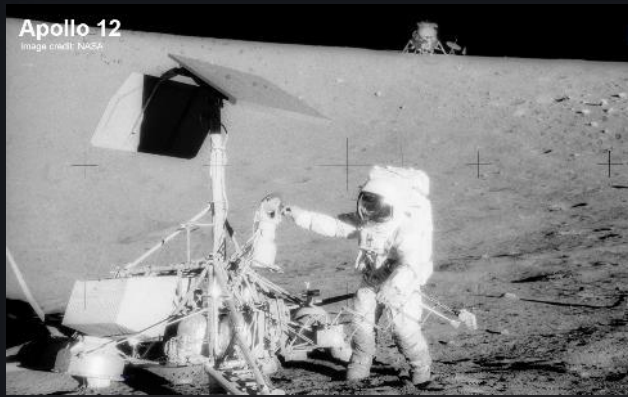
There will be local employment and business opportunities for communities along the route during construction. The Government of Yukon is working with First Nation governments, Indigenous groups, local businesses and communities to make the most of these opportunities.

Route



- Dempster Fibre Line
- Mackenzie Valley Fibre Link
- Existing NorthwesTel Fibre

Communities across the North will directly benefit from the fibre line. The line will be owned by the Government of Yukon and operated by NorthwesTel.



Apollo 12
image credit: NASA



Final image received from **Beresheet**
Courtesy of SpaceIL



C3-Privileged

Leader in Lunar coms.



Strong Heritage

- 15 years of commercial Lunar communications support
- NASA Apollo missions' heritage
- Astronaut Pete Conrad founder of USN (Today SSC Space US)
- SSC manufacturing SMART-1

Leader in Lunar communications

- 5 missions which orbited the moon
- 3 lunar flybys
- **4 routine missions currently operating in cislunar space**
- 2 vehicles which reached the surface
- More than 4,000 days delivering lunar communications
- More than 20,000 tracking hours

Solid Present

- SSC is the only commercial partner offering a full-scale Lunar mission support

Bright Future

- 120 Lunar missions expected over the next decades (source Euroconsult 2019-2028)
- 4 SSC Lunar stations needed for global coverage
- SSC is making new investments in its Lunar network to support trusted customers

SSC Commercial Lunar Missions





SSC is currently the only commercial lunar communications provider in the world!



Image credit: SpaceIL



European space operations center

esa
esoc

SPACECRAFT	DATE	LAUNCHER
MOP 1	17 07 01	ARIANE
MOP 2	17 07 02	SHUTTLE
MOP 3	21 11 05	ARIANE
ITALSAT P2	2 9 07	ARIANE
MTF	16 10 07	TITANIVB
HUYGENS	15 10 07	ARIANE
PROTECTOR	12 11 01	SHUTTLE
HYPERDOL	12 11 01	ARIANE
ESL 1	12 11 01	ARIANE
ESL 2	12 11 01	ARIANE
ESL 3	12 11 01	ARIANE
ESL 4	12 11 01	ARIANE
ESL 5	12 11 01	ARIANE
ESL 6	12 11 01	ARIANE
ESL 7	12 11 01	ARIANE
ESL 8	12 11 01	ARIANE
ESL 9	12 11 01	ARIANE
ESL 10	12 11 01	ARIANE
ESL 11	12 11 01	ARIANE
ESL 12	12 11 01	ARIANE
ESL 13	12 11 01	ARIANE
ESL 14	12 11 01	ARIANE
ESL 15	12 11 01	ARIANE
ESL 16	12 11 01	ARIANE
ESL 17	12 11 01	ARIANE
ESL 18	12 11 01	ARIANE
ESL 19	12 11 01	ARIANE
ESL 20	12 11 01	ARIANE
ESL 21	12 11 01	ARIANE
ESL 22	12 11 01	ARIANE
ESL 23	12 11 01	ARIANE
ESL 24	12 11 01	ARIANE
ESL 25	12 11 01	ARIANE
ESL 26	12 11 01	ARIANE
ESL 27	12 11 01	ARIANE
ESL 28	12 11 01	ARIANE
ESL 29	12 11 01	ARIANE
ESL 30	12 11 01	ARIANE

SPACECRAFT	DATE	LAUNCHER
TEAMSAT	30 10 97	ARIANE 5
CLUSTER II-3	10 12 99	SOYUZ
CLUSTER II-2	16 7 00	SOYUZ
CLUSTER II-1	9 8 00	SOYUZ
CLUSTER II-4	1 3 02	ARIANE 5
ENVISAT	1 3 02	PROTON
MSG-1	29 8 02	ARIANE 5
INTEGRAL	17 10 02	ARIANE 5
MARS EXPRESS	2 6 03	SOYUZ

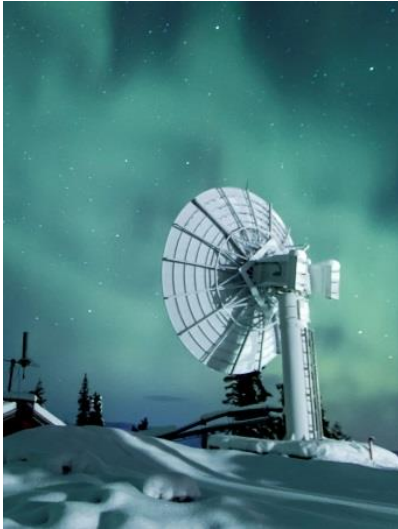
Spacecraft Operations & Engineering Services

European space operations center

Support throughout



Satellite & Spacecraft Operations



Ground Segment Infrastructure



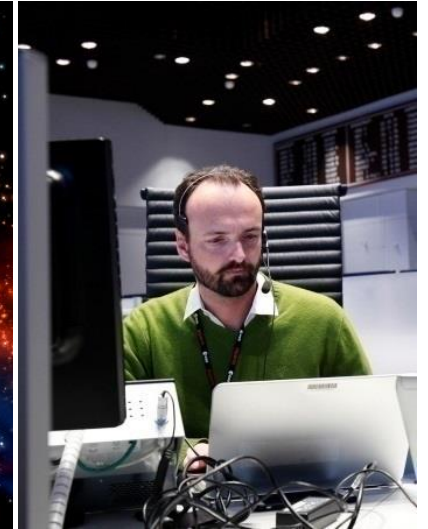
Systems Engineering



Training & simulations



Mission Assessment & Engineering



Independent Consultancy



Data Analytics Services GlobalTrust

- Using satellite imagery and data to deliver sustainable strategies for:
 - Corporate Social Responsibility (CSR)
 - Ethical Investments
 - Public Policy Delivery



Using the power of satellites for a better world

Climate change and the general awareness of its impact continues to have a profound effect on economy, societal priorities, and cultural perspective of all major world economies. Business practice is having to change as a result of global challenges.

Via the SSC data analytics company GlobalTrust we are using the power of satellites to empower organizations, governments and companies worldwide to act ethically for a better world. Space data is used to develop and deliver sustainability strategies by embedding ethical practices into the future of decision making.

A large, semi-transparent image of an astronaut in a space suit is centered in the background. The astronaut is in a floating position, with their arms and legs slightly out. The image is rendered in a dark, monochromatic style with a blue and purple color palette, making it blend into the dark blue background of the slide.

**We help
Earth benefit
from space**

www.sscspace.com