## A\_obdd INUKNET

# THE NEW ARCTIC CONNECTED MINE



NUNAVUT MINING SYMPOSIUM



## **Panarctic** Communications



### PANARCTIC COMMUNICATIONS AND GALAXY BROADBAND **COMMUNICATIONS FORM NEW ARCTIC TELECOM COMPANY**

Panarctic Communications, a wholly -owned subsidiary of **Oikiqtaalik Corporation and Galaxy Broadband** Communications, a wholly-owned subsidiary of Crown Capital Partners Inc. (TSX: CRWN), have formed a new telecom company to service Canada's Arctic – INUKNET Communications Inc. ("INUKNET").

**INUKNET** is majority Inuit owned – Head office in Iqaluit







## **Experience A New Approach To Business Internet In Nunavut**

No matter how remote your business is, get connected with a better internet experience. At INUKNET, we're committed to deliver fast, reliable and secure internet services to businesses and remote sites across Canada's Arctic.



IINUKNET is Inuit Owned & Operated



"Unlimited Plans" with No Overage Charges



24x7 Dedicated Technical Support



Faster Speeds & LEO Low Latency Interne



#### Connecting 25 communities in Nunavut



Solutions for Community, Mining,Governemnt, Energy and Construction Businesses

## For Over 10 Years We Have Been Providing Communication Solutions to Canada's Arctic Mining Companies.







Baffinland



## GLENCORE

## Transforming the Mining Industry with Transformational Communication Solutions.



## First Big Development -The Galaxy integrated internet Gateway (GiiG)

This system manages the site through SDWAN technology that offers application routing for the best user experience and increased reporting for internet solutions firewall/Cyber Security, LAN distribution controller for Wi-Fi and P2P.

Multiple Internet sources:

- Ka band SES17 high powered Netflix and back up
- C band Telesat Most expensive Bits but most reliable
- LEO satellites One Web Game Changer with enterprise low latency and dedicated bandwidth (CIR)
- LEO satellites Starlink Residential service, browsing, cheapest bandwidth



# GiiG

### GALAXY INTEGRATED INTERNET GATEWAY

## Second Big Development - The LEOs Are Here



### 150x30 Mbps



Low Latency



Global Coverage



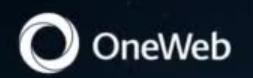
24x7 Technical Support -OneWeb only



QoS Tagging and SLAs -OneWeb only





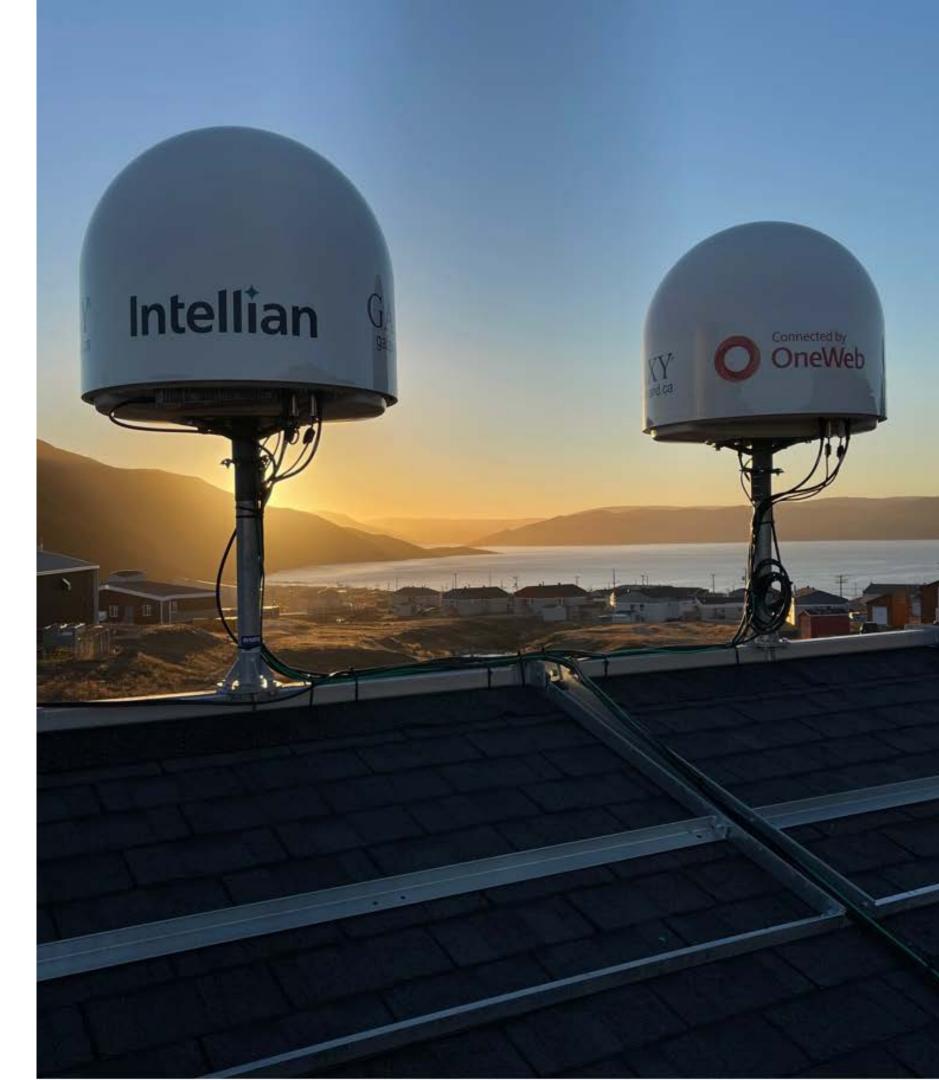




## The OneWeb Advantage

Low Earth Orbiting (LEOs) are transforming remote internet with fiber like connections anywhere – OneWeb and Starlink

- These allow the user experience to be very close to a fiber connection that enables automation, remote control, and autonomous vehicles. This allows remote Arctic mines to be more profitable and competitive globally
- Mines can now deploy new software such as SAP, Citrix and TEAMS that increase worker productivity, and mine profitability
- Better internet increases worker morale higher retention



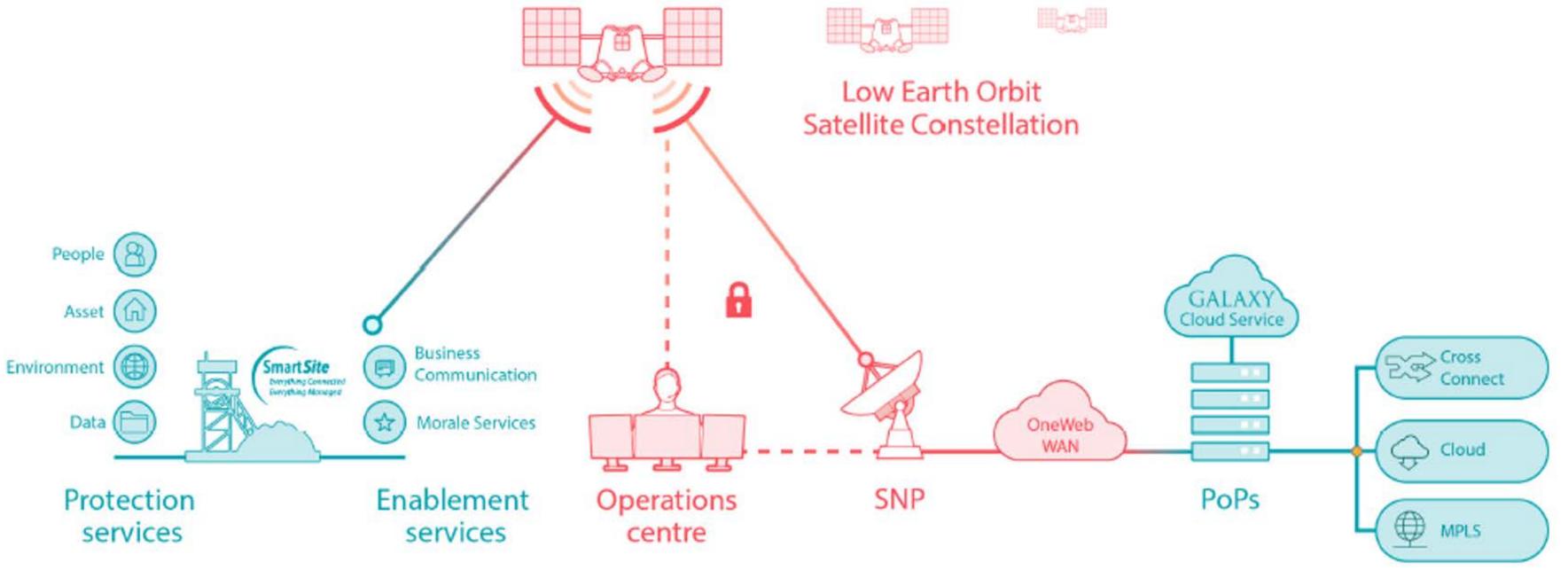
## I'm Doug Harvey from Galaxy Broadband,

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## Galaxy (INUKNET) and OneWeb Partnership



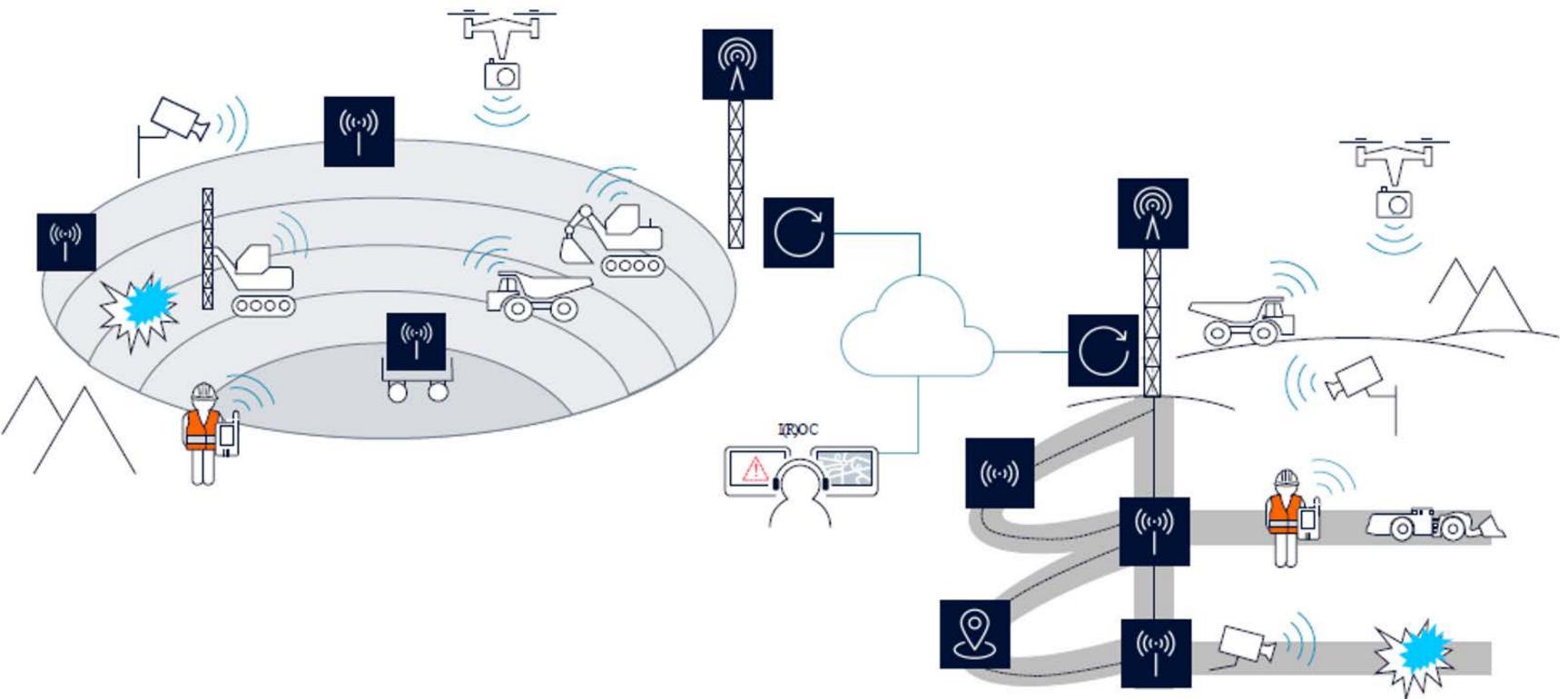
## Third Big Development - Private LTE/5G

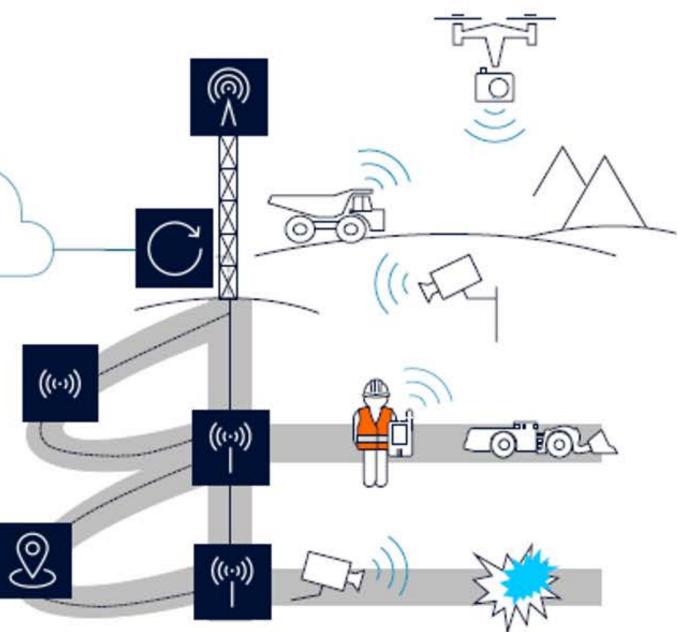
# Solutions 4000000 @nokiaindustries



## Open-pit vs. underground mines

Two different environments, same network technologies





Monitor all operations in real time to respond quickly to critical events

Industrial location tracking and geofencing

IoT sensors monitor machines, vehicles, environment and workers' safety/health



#### **<u>360°</u>** situational awareness

Analytics for video feeds

## Data connectivity from/to machinery, vehicles and IoT sensors

Mission-critical Push-to-Talk and Push-to-Video communication

## Use cases for mining One single network for creating the connected digital mine

#### Real-time and near real-time broadband data

#### Mission-critical communications

Massive IoT & analytics











On-demand adaptive bit rate video from vehicles and machines with potential for teleoperations.

Video monitoring and analytics on CCTV and drone camera streams for surveillance, inspections and repair.

Augmented reality (e.g. overlay of obstacle detection) on topographical maps, digital twin creation and synchronization.

Mission-critical Push-to-Talk (PTT) and Push-to-Video (PTV) services for worker safety and team communication applications (out-phasing TETRA/P25)

Communio from sens asset heal diagnostic position re environme monitorin process co and optim

High bit rate High bit rate Low bit rate. Moderate bit rate low latency high priority Low to moderate latency

Low bit rate. moderate to high latency



#### Worker health and safety

#### Optimized mine-to-port



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Worker health and safety monitoring with digital Personal Protective Equipment (PPE) and wearables, geofencing for unauthorized or unsafe areas.

Leveraging extreme autonomy and near-real time equipment, load and people tracking for improved safety, productivity and efficiency.

Low to moderate bit rate and latency Low to high bit rate, low to moderate latency

## Fourth Big Development - SmartSite





#### Reliable & Secure

End-to-end management



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### High Performance





RRE

#### **Satellite TV Service**

An extensive channel line up including pay-per-view events, complete with a customizable welcome screen and guide.



SCADA / IoT Connect all of your sensors, gather information, and monitor all your activity over our links.



#### SMU / Managed Services

Complete IT solutions that help you manage your bandwidth and costs. We protect, manage, and report to ensure best end user experience.



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#### Morale / Public WiFi Access

Easy and reliable site wide wireless access to Internet and Pay2Go Hot Spot services on mobile devices, laptops, and tablets, up to 10Gb.



#### VoIP / PBX

VoIP solution for the offices or morale / public users that delivers fully featured phone service including PBX options over our satellite or P2P wireless networks.



Private LTE/5G Overarching network providing complete site connectivity for IoT, video, device connectivity and automation. Smart Site Everything Connected Everything Managed

#### Office / Contractors VLAN

Multiple networks are available for corporate offices, Contractors or VIPs through separate VLAN networks that can be accessed site wide.



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P2P & Structured Cables Connect all of your buildings and offsite locations with fibre and P2P Microwave.

#### Satellite / Redundancy

Galaxy's multi-satellite fleet provides the widest choice of available speed and throughput to your site for the best performance and complete redundancy.

## THE INUKNET Edge

## GiiG

The GiiG provides multiple internet connection for redundancy, lower cost of Mbps and best management of bandwidth



LEO satellite networks provide faster, low latency– fiber like connections that enable new software implementation for more efficient and profitable mines with an empowered and happier workforce

NO

Private LTE provides an over arching technology that connects everything which improves productivity, ensures safety and enables monitoring



SmartSite totally manages, connects and monitors your site with 24/7 support – turn key solution = peace of mind





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