COMMUNICATION, AUTOMATION AND DIGITAL MINE SOLUTIONS

German/Australian Mining Delegation

Presented by
Tiaan Tromp - Chief Sales Officer

18 November 2021

WHO WE ARE
AS A COMPANY

OUR VISION & MISSION

VISION

Nerospec SK's expertise makes **Mines, Machines and Miners safer, efficient** and **more productive** through our communication, automation and digital machine solutions.

MISSION

We deploy **independent** Mining machine communication, control and automation solutions for Mines worldwide.

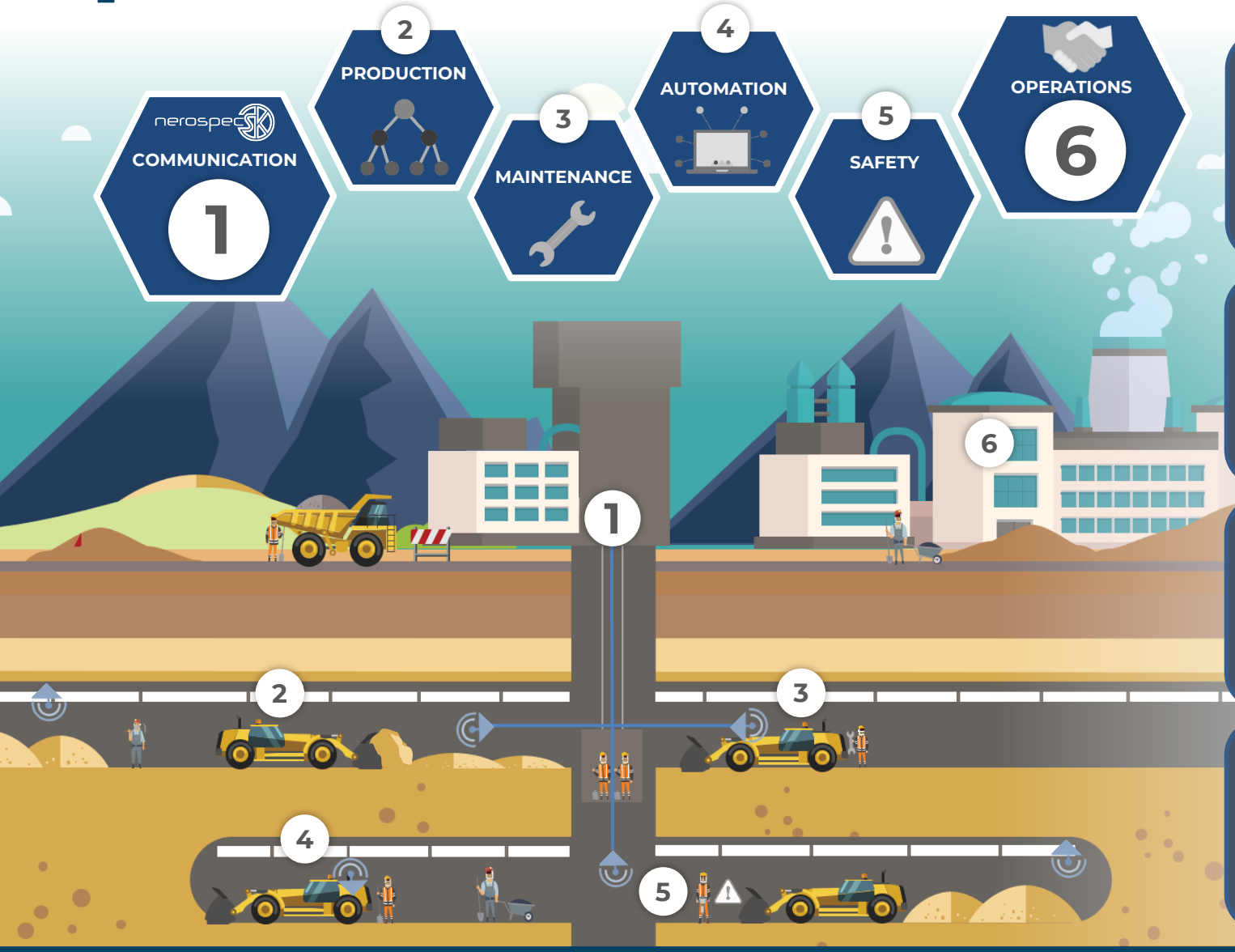
We connect machines, creating **valuable decision-making insights** on demand.

We adapt **leading-edge technologies** to the underground mining environment.

We are passionate, experienced and committed to delivering the 4'th Industrial Revolution to the Mining sector.

OUR
APPROACH

APPLICATION OVERVIEW



NEROSPEC SK APPROACH

Wireless comms, data and direct control of underground machines

Any equipment OEM partner

Any technology partner (PDS, analytics, automation)

COMMUNICATION

The fundamental enabler of modern safety, data analytics, and machine control is wireless underground communication.

PRODUCTION

Check machine performance and utilization directly at shift end directly at the machine or from the cloud and compare performance.

MAINTENANCE

Smart sensors collect machine data providing fresh machine health information - enabling to optimize maintenance work based on real machine condition.

AUTOMATION

Automating equipment in mine operations creates exciting new and lucrative opportunities to improve productivity.

SAFETY

Increased mine safety relies on several factors including, reliable and immediate communication, intervention controls, prevention through activity insights .

OPERATIONS

New insights collected from our **smart monitoring devices** are used **to streamline operations, improve planning and** reduce **downtime.**

HARDWARE
APPROACH

WORKING TOWARDS SAFETY

01 INTERFACE **02 ACQUISITION** **03 CONTROL** **04 COMMUNICATION** **05 LOGGING**

picoHUB

Single CAN Bus Logger
Low Cost Entry Level
GPS and WiFi Radios
LPWAN Radio Option

nanoHUB

Dual CAN Bus Logging
3x Power Valve Actuator Channels
12 bit Analog to Digital Resolution
Real Time Clock Logging
Half priced compared to neroHUB
WiFi & GPS Radios standard

neroHUB

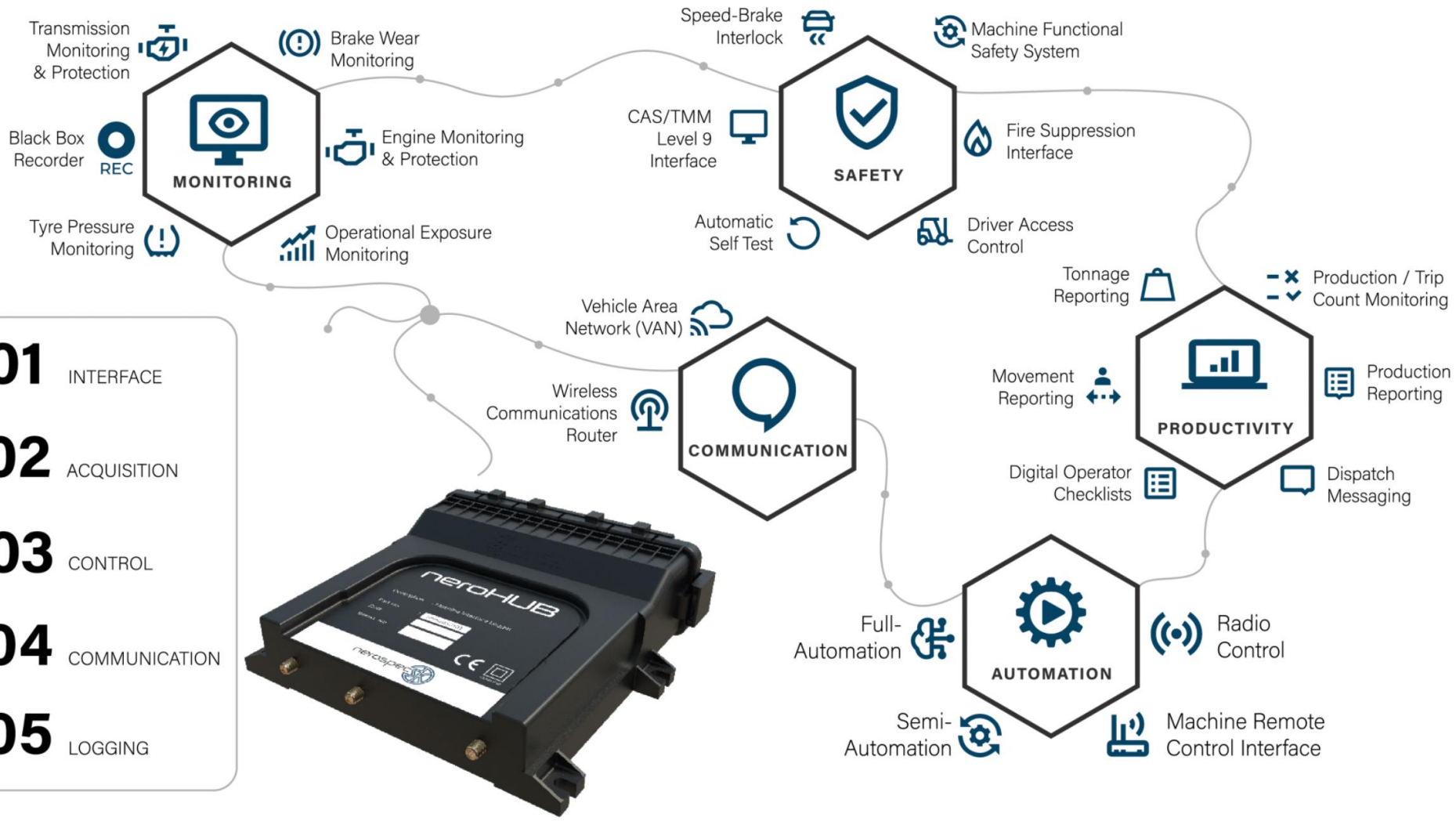
5x Power Valve Actuator Channels
2 Years unattended Logging Capability
24 bit Analog to Digital Resolution
Core ARM3 Embedded CPU power
WiFi, Bluetooth and GPS Radios standard
Intrinsically safe*

cyberHUB

Massive Input / Output Capability
neroHUB with neroDAQ Expansion
Vehicular Ethernet Connectivity
Neural Net Video and AI Processor
Third Party Automation Micro-Server

THE HUB FAMILY SUITE

FOR A **COMPLETE CONNECTED** MACHINE SOLUTION



picoHUB

nanoHUB

neroHUB

cyberHUB

BESPOKE, AGNOSTIC & TRUSTED

nerospec SK

indurad – The Industrial Radar Company
MERNOK ELEKTRONIK – Innovative Power and Control
STRATA WORLDWIDE
MPI – Saving Lives
PBE
EiQ
BOOYCO ELECTRONICS
MATRIX
GE
MST
EDG – Electro Diesel Group – We've Got The Drive
SAFE mine
SCHAUENBURG Systems

Barloworld Equipment CAT
Epiroc
Fletcher
GHH – Solid As A Rock
BELL
MANITOU
FERMEL
SANDVIK
RHAM EQUIPMENT
normet
MAUBRA – Utility Products
AARD – Mining Equipment
mine master – Rigs for your needs

CAN BUS (ISO)
EMESRT (ISO)
LISCA (ACARP)

MODBUS
PROFIBUS
CUSTOM

PDS
AGNOSTIC

The agnostic nature of Nerospec's PDI is demonstrated through a well-established track record of working with multiple proximity sensor and detection vendors.

OEM
AGNOSTIC

The agnostic nature of Nerospec's PDI is demonstrated through a well-established track record of working with multiple mining machine OEM's.

SOFTWARE
APPROACH

SOFTWARE INFRASTRUCTURE

Optimisation Insights

SIMAC®

SIMAC® stands for **Short Interval Monitoring And Control.** This front end dashboard provides insight into mine **Safety, Production, Monitoring, Automation, Operations** and **Maintenance**. Valuable insights include heat maps generating high man and machine interactions, which assists safety decisions. Other insights include production metrics such as TMM utilisation and graphs comparing machine performance over a shift.

HUBsum

HUBsum or operational summary can be collected from the machine in less than 10 seconds. An industry first made possible by onboard edge computing technology. Little data can be viewed on any android device or PC. Within the APP the operator or supervisor can break down the display time into various time periods for ease of viewing. It can range from hourly to monthly segments and even predetermined shifts. Little data is able to store up to 91 active hour buckets of data. Everything from distance travelled to cylinder head temperature. It will automatically log SBI and PDS interactions and provide a summary of time spent in those states.

CONNECTED
MACHINE VIDEO

Play Video...

CONTACT US

sales@sk.nerospec.com

+49 2052 888 300

www.**sk.**nerospec.com

Germany
Hauptstr. 123
42555 Velbert-Langenberg