



# Your Mixed Fleet Management Solution

Creating Value Together

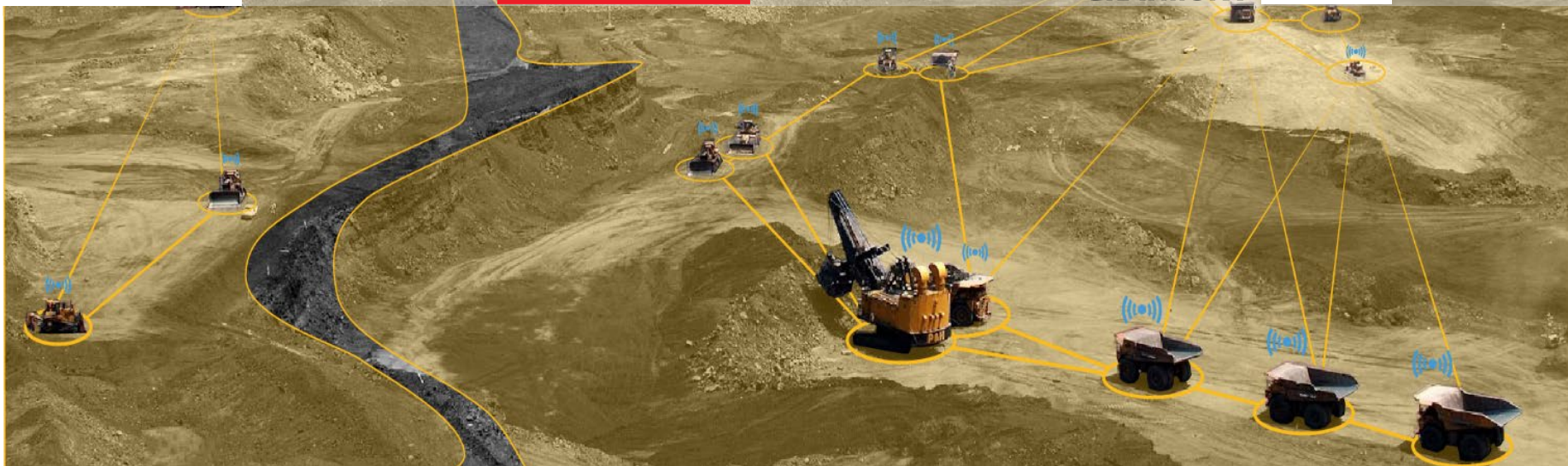
## Smart Quarry Site – Fleet Management Solution

**Presenter:** Aaron Marsh – National Product & Solution Manager Smart Construction Division

**Date:** July 2024

# Truly Agnostic Fleet Management Solution

Smart Quarry Site



## Machine All Brand



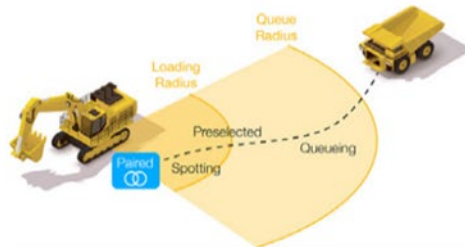
## Fleet Management System



Automatic pairing

## Machine to Machine

Pairing Data Exchange



Real-time data plus constant communications reliability enables proactive decisions and changes

# The Solution and the Development Framework



Smart Quarry Site provides site and project management personnel with an “at a glance” **production visualisation** of any quarry or major civil construction site.



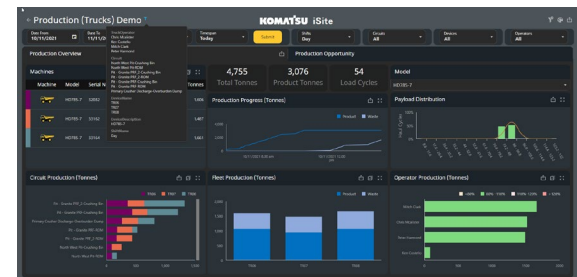
**Fleet Health monitoring** allowing better maintenance



Smart Quarry Site gives the user a **real time animated overview** of every movement of production machines – and the material you are extracting, shifting or placing



Digital Pre-starts and safety and incident alerts



Machine	Model	Serial No.	Plan No.	SOB	Utilisation %	Utilisation Trend	Total Tonnage	Load Cycle Count	Fuel Burn (L/Hr)	Health	Prod Start	Events	Comments
HD605	HD605	10001	10001	10001	100%	↑	1000	10	100	HEALTHY	10/10/2023	HEALTHY	
HD605	HD605	10002	10002	10002	75%	↓	500	5	50	HEALTHY	10/10/2023	HEALTHY	
HD605	HD605	10003	10003	10003	100%	↑	1000	10	100	HEALTHY	10/10/2023	HEALTHY	
HD605	HD605	10004	10004	10004	100%	↑	1000	10	100	HEALTHY	10/10/2023	HEALTHY	
HD605	HD605	10005	10005	10005	100%	↑	1000	10	100	HEALTHY	10/10/2023	HEALTHY	
HD605	HD605	10006	10006	10006	100%	↑	1000	10	100	HEALTHY	10/10/2023	HEALTHY	
HD605	HD605	10007	10007	10007	100%	↑	1000	10	100	HEALTHY	10/10/2023	HEALTHY	
HD605	HD605	10008	10008	10008	100%	↑	1000	10	100	HEALTHY	10/10/2023	HEALTHY	
HD605	HD605	10009	10009	10009	100%	↑	1000	10	100	HEALTHY	10/10/2023	HEALTHY	
HD605	HD605	10010	10010	10010	100%	↑	1000	10	100	HEALTHY	10/10/2023	HEALTHY	

# Development Focus and Targets



## Smart Quarry Site Product Summary

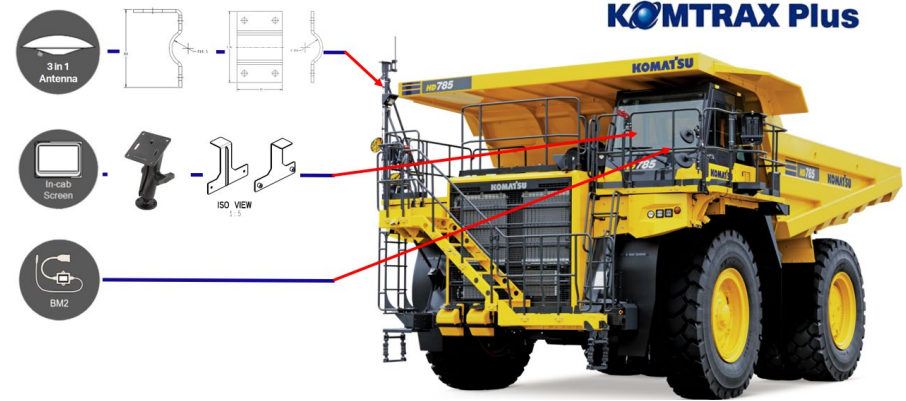
- Smart Quarry Site is an agnostic fleet management solution for **quarry and large construction sites**
- Simple in-cab automated operation and display
- Sophisticated in office real-time site monitoring
- Real-time data aggregation visualised and usable
- Selection of industry leading dashboards – built with voice of the industry in mind
- Addressing sustainability goals
- Addressing skilled labour shortage
- Forecasting future production levels

# Komatsu SQS – Solution Summary



## HARDWARE & SOFTWARE & TOOLS

- Easy-to-use in-cab automated operation and display
  - Minimal operator input requirement
- Real-time site monitoring to enable active decision making
  - Replay function to review events, circuits, etc.
- Industry leading dashboard providing operation visibility
  - Production, carbon output, fuel usage (litres/tonne, litres/hr, operator comparisons etc.
- Addressing sustainability goals and safety on site
- Forecasting future production levels



Hardware is the same for all makes – “OEM” Agnostic

Single or Multiple site access

## Smart Quarry Site



- The technology is now available that's squarely positioned for quarry
- Immediate Realtime production information at the quarry managements fingertips
- The ability to make actionable changes with production and fleet data immediately not having to spend hours in the quarry and office
- Have a competitive advantage over those who are not investing in the future and tapping into these valuable insights
- You are not alone, opportunities like IQA make solution awareness to industry a reality
- Operation efficiencies to develop best practices that now can be applied to your quarries through continues improvement

# Quarry Pursuit of Sustainability

What is your ambitious target for CO<sub>2</sub> emission reductions at your quarry?

## Smart Quarry Site



Increased production –  
less cycles



Reduce your CO<sub>2</sub> emissions  
Paperless environments  
and workflows



Reduction in litres per hour  
Improve litres per tonne

**40 to 50 percent of CO<sub>2</sub> emissions come from diesel used in mobile equipment\***

REFERENCE: McKinsey Creating the Zero-carbon Mine June 29,2021/Article

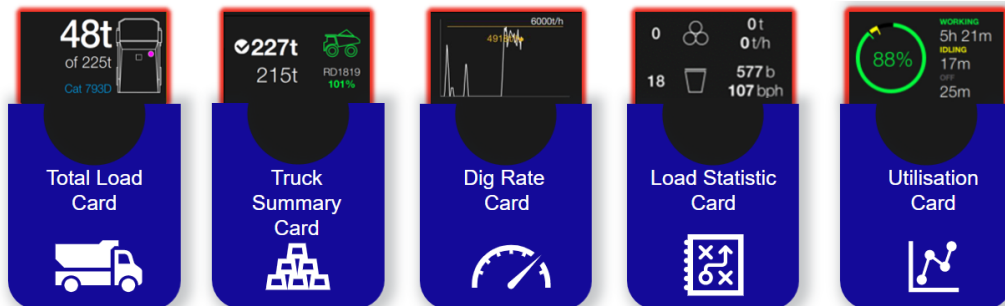


# The Operator Guidance

- In Cabin features have been built with automation in mind, giving the operator guidance and production information.
- This process is automated with some manual functions – as required
  - Start the day with **Prestart** – machine specific
  - Activity
  - Delay
  - Material
  - Destination
  - Location and Load group



## Typical in Cab fleet cards for Operators



# Peer to Peer Mesh Network & Machine to Machine Handshake



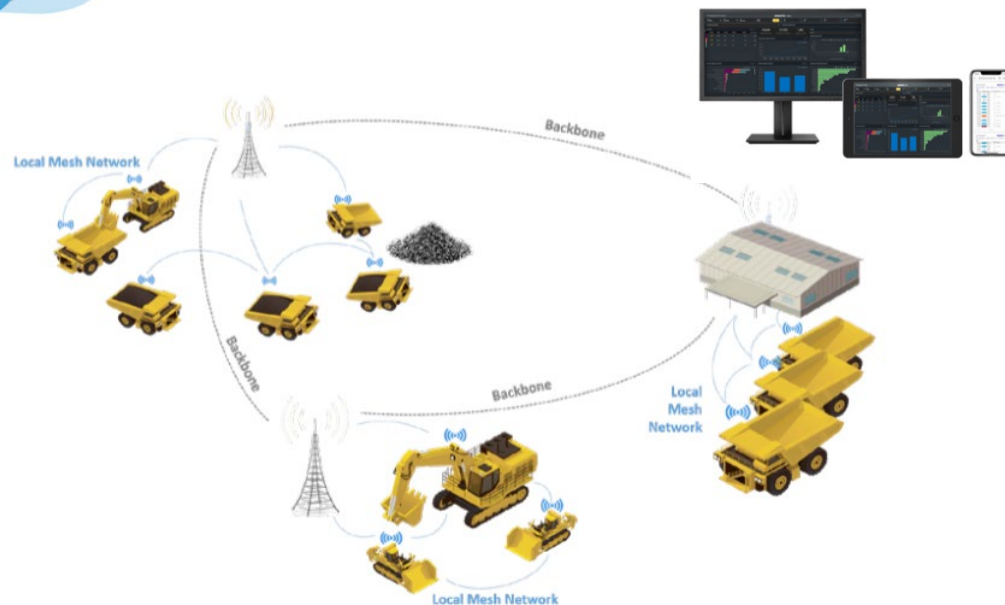
The Smart Quarry Site mesh network is made up of a collection of wireless networking devices.

These wireless devices “Machines” automatically recognise and talk to each other.

## Data is exchanged automatically between:

- Paired vehicles:
- Vehicle IDs,
- Target & actual tonnage,
- Material, destination.

Once loading has been instigated, the vehicles will automatically “pair”.

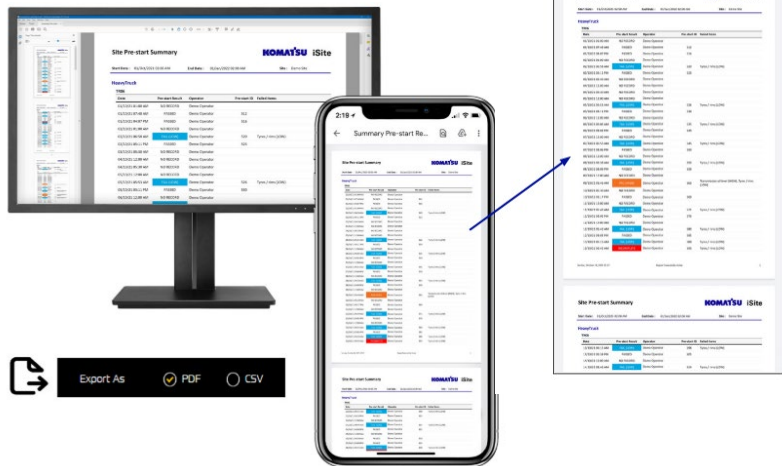


# Electronic Pre-Start & iReports

## iReport

iReport is an online reporting tool that can be accessed via Smart Quarry Site and provides summary production data in a format configured to site needs.

- **Access all historical data:** Includes both standard and customised reports.
- **Do it all:** Save, print and share reports easily.
- **Set and forget:** To schedule recurring reports, choose a report, a time, and the recipients. Done.
- **Universally accessible:** Install once, access anywhere. On any device.



## PreStart Reporting

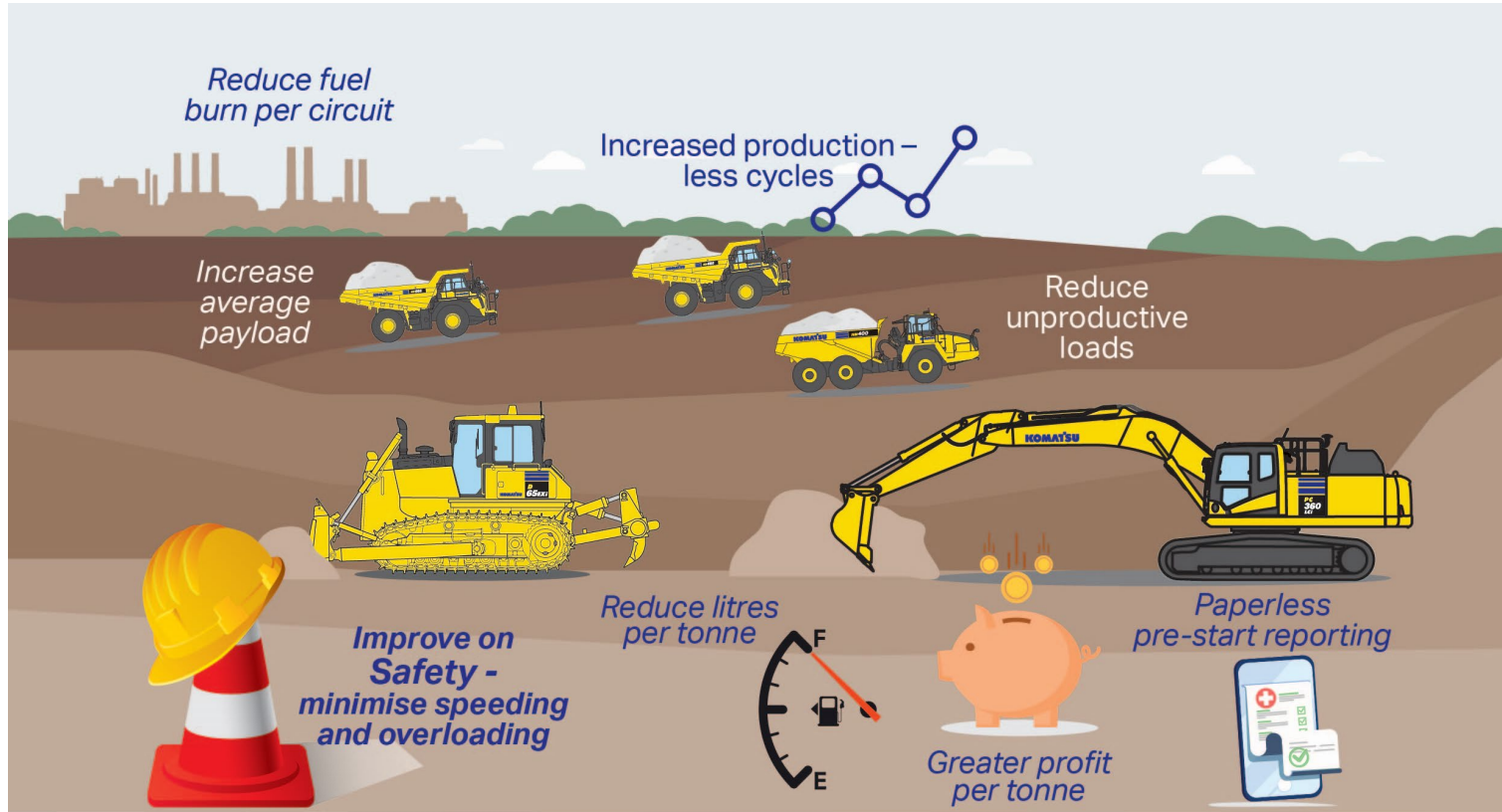
- Get instant notifications by SMS or Email
- Detailed summary report for each PreStart
- Any item that fails a PreStart is sent by the notifications method

## Summary Report

- Be ready to support your site PreStart audits with full history of completed PreStarts and easily generate any date range
- View failed items for the history of your PreStarts
- All failures are specific to the machine and based on severity



# ROI – The Return



\*Results will vary per site and fleet size and will be targeted to your specific requirements. Images for illustration purposes only

# Real Example of Return on investment

August 2020 – Average Payload **82.9** tonnes

August 2021 – Average Payload **89.5** tonnes

Measured Savings to site: **\$ over 200K**

Customer Investment [8 Units]

- 3 Trucks
- 4 Loaders
- 1 Dozer



CO<sup>2</sup> savings measured on site over **215 Tonnes\***

Return On Investment in **6 Months\***

Ongoing SaaS after first 12 months under \$3K/Unit/Annum

**Consistent and repeatable  
through real time data**

# Introducing Winstone Aggregate Group

## Hunua Quarry

- Aggregate Production around 3.3 million tonnes per annum
- Mixed Fleet

## Typical Applications at the site

- Load & Cart from Pit **8.5 hours per day**
- ROM loading to crusher **20 hours per day**
- Primary Scalp and Tertiary Bins carting to stockpiles **20 hours per day**



## John Robison

**ROLE:** Graduate Process Engineer

**BIO:** Joined Winstones Hunua Quarry at the Start of 2023

*JR is using technology and data to automate repetitive tasks and drive improvements in operational efficiency.*

Fleet Focus | Smart Quarry Site

Date: 7/4/2024 | Site: Winstone Aggregates - H... | Shifts: Day | Devices: All | Check Oil Samples

(All) Trucks Excavators Wheel Loaders Tracked Dozers Graders

CLICK THE VEHICLE SERIAL NUMBER TO SEARCH FOR AND SOURCE PARTS

Machine	Model	Serial No.	Fleet No.	SMR	Utilisation	Utilisation trend	Total Tonnes	Load Cycle Count	Fuel Burn L/Hr Last Hour	Health Level, Next Sensor	Pre-Start	Events Last 30 Days	Comments
Contractor	VIRTUAL	CONTRACTOR	00	0.0%	0.0%		0	0	0	NO FAULTS	NO RECORD	NO EVENTS	NO COAMS SINCE 06/07/2024 05:00
HD405-8	5022	TRUCK 01	103.9	79.51%	-1.6%								
HD405-6	3020	TRUCK 10	0.0	0.0%	0.0%	2,550	76	0	NO FAULTS	BUSSED	NO EVENTS	ONLINE	
HD785-7	34783	TRUCK 66	825.9	85.15%	-1.4%								
HD785-7	34786	TRUCK 67	832.4	84.39%	-1.2%								
HD785-7	34804	TRUCK 11	196.0	78.70%	-0.7%								
Other Excavator	VIRTUAL	OTHER EXCAVATOR	0.0	0.0%	0.0%	0	0	0	NO FAULTS	NO RECORD	NO EVENTS	NO COAMS SINCE 06/07/2024 05:00	
Other Loader	VIRTUAL	OTHER LOADER	0.0	0.0%	0.0%	0	0	0	NO FAULTS	NO RECORD	NO EVENTS	NO COAMS SINCE 06/07/2024 05:00	
PC1250-11R	5080	PC1250-4155	806.9	96.49%	+0.1%	4,733	48	97.9	NO FAULTS	BUSSED	NO EVENTS	ONLINE	
Sales Loader	VIRTUAL	SALES LOADER	0.0	0.0%	0.0%	410	11	0	NO FAULTS	NO RECORD	NO EVENTS	NO COAMS SINCE 06/07/2024 05:00	

# iControl – Management Quarry Visualisation from anywhere





# Smart Quarry Site Product Video







# Creating Value Together

