

SMART CHIPS - Immersing Pulp & Paper into Digital Transformation

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InnoTech Alberta



- Established in 1921 – Alberta’s major Innovation Centre
- 221 Team Members (+50% Masters/PhDs)
- 4 World Class Facilities
 - Edmonton – Millwoods Research Centre
 - Calgary
 - Vegreville
 - Devon
- Main Industry Sectors
 - Pulp & Paper
 - Oil & Gas
 - Agriculture
 - Environment



InnoTech Industrial Sensors for Pulp and Paper

CLIQS 2000
(Char Detection)



CLIQS 2008
(Blue Stain Detection)



SMART CHIPS
AI Vision



2000

2004

2008

2014

2019

2021

CLIQS 2004
(Chip Brightness)



Raman Bleach Analyzer



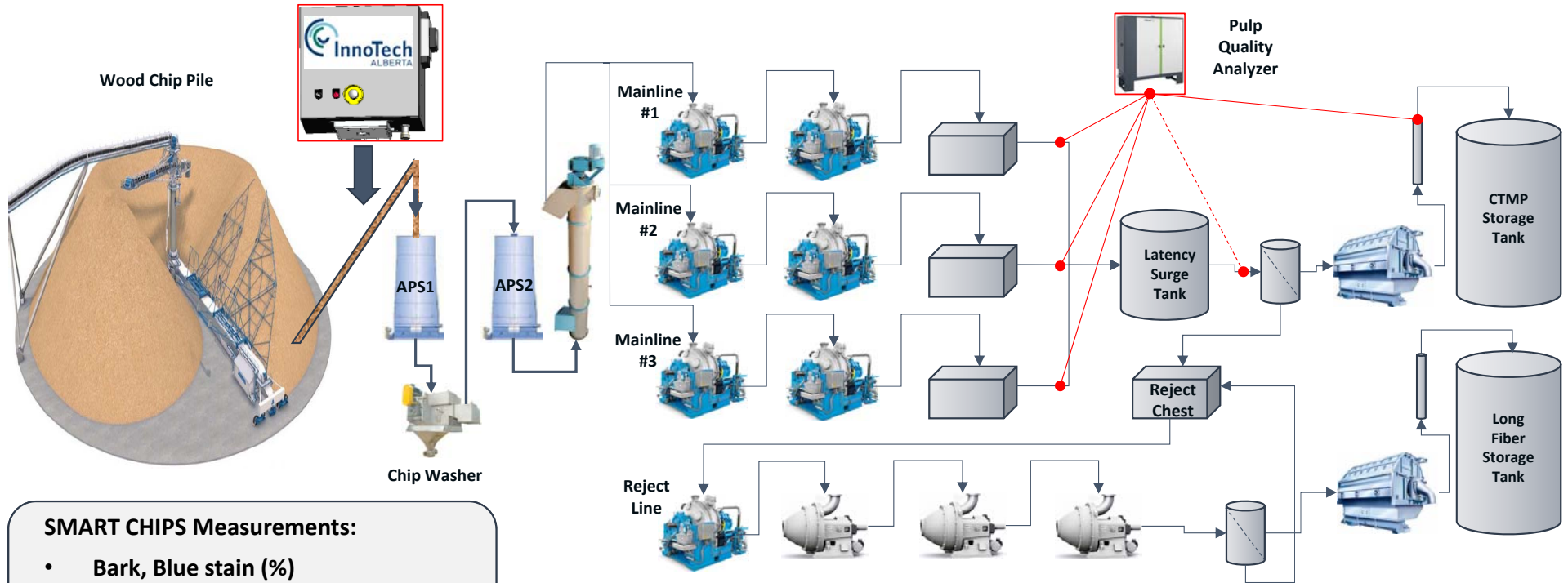
Online Pitch Analyzer



SMART CHIPS is an AI (Artificial Intelligence) Vision based online analyzer for real time wood chip quality measurements.

SMART CHIPS Analyzer – ANC Mill

SMART CHIPS



SMART CHIPS Measurements:

- Bark, Blue stain (%)
- Chip Size distribution (new model)
- Wood Species

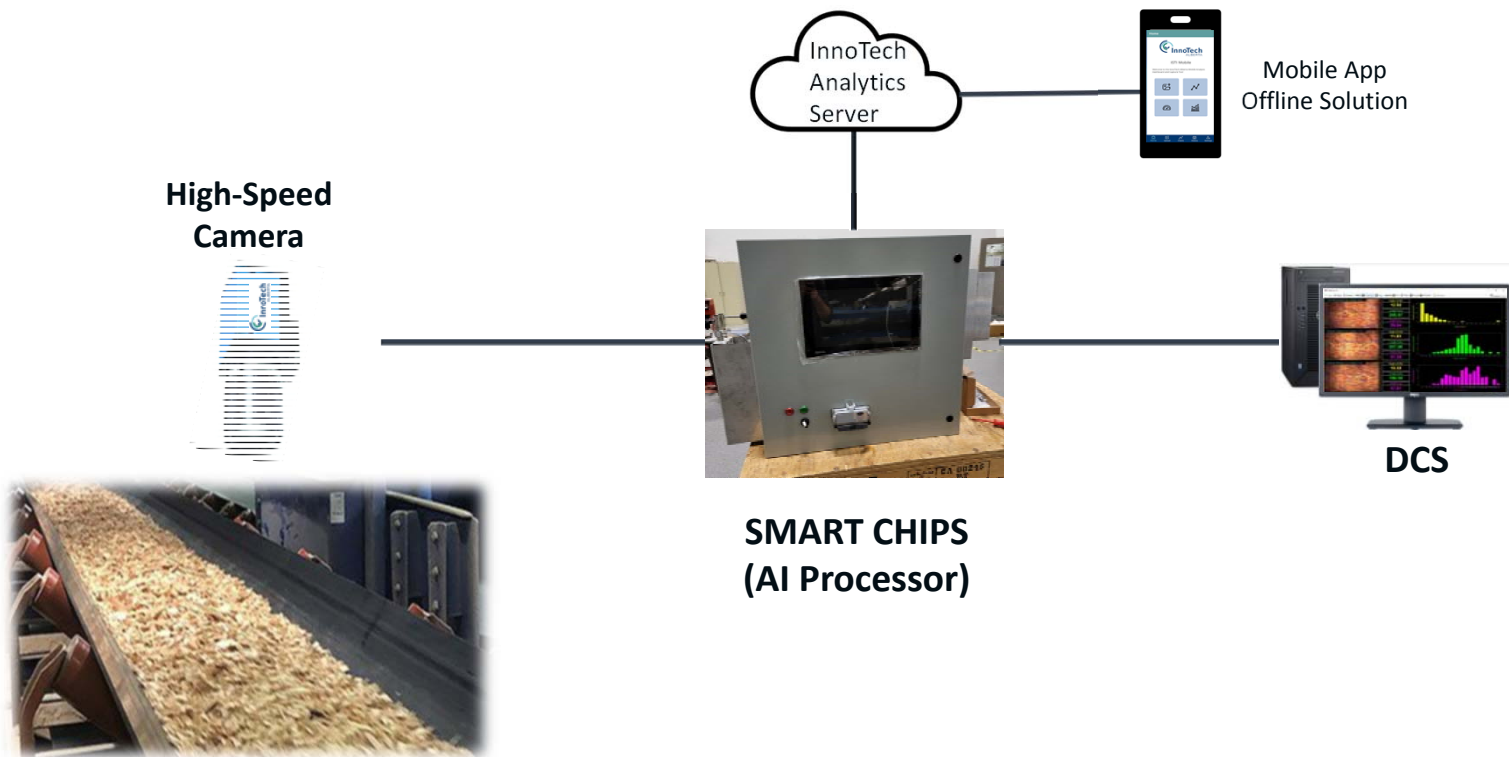


SMART CHIPS - Industrial Solution

Design to Build

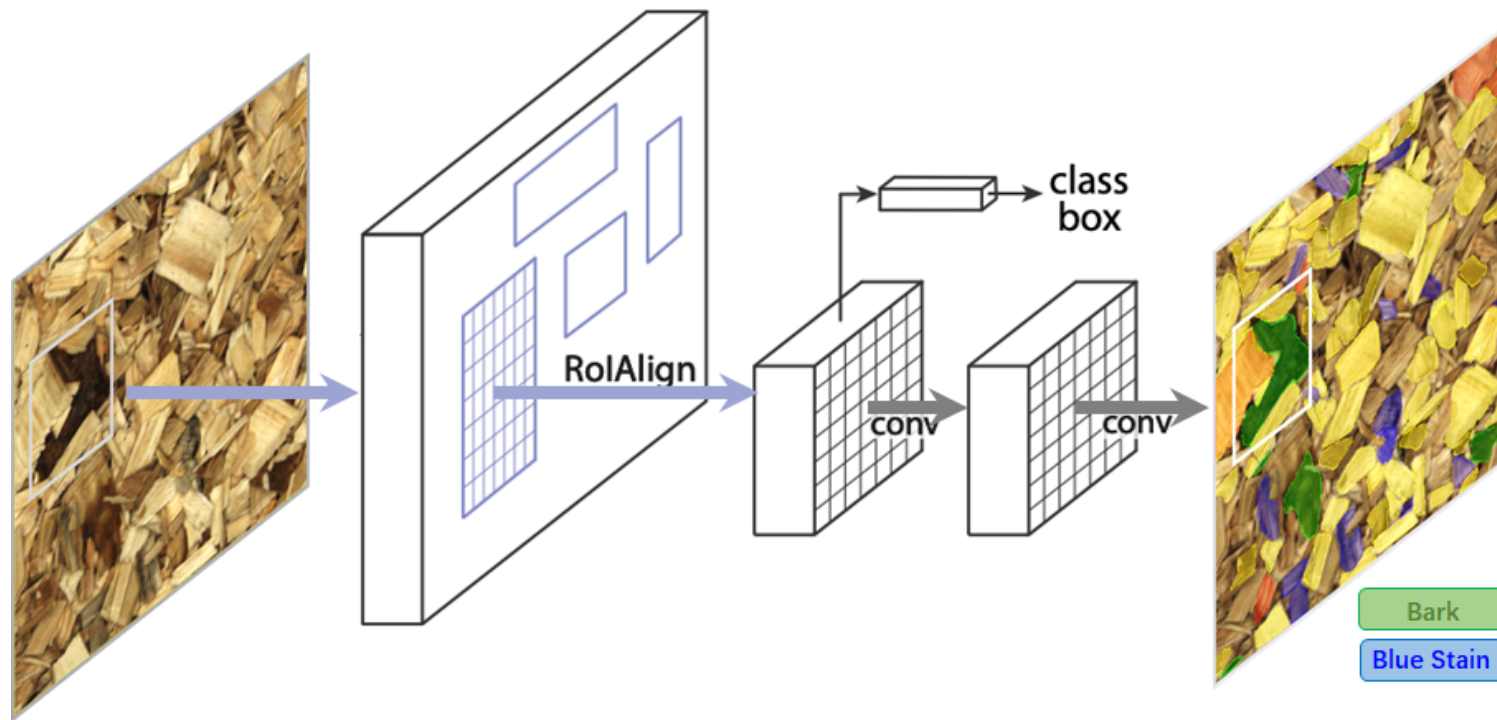


SMART CHIPS Architecture

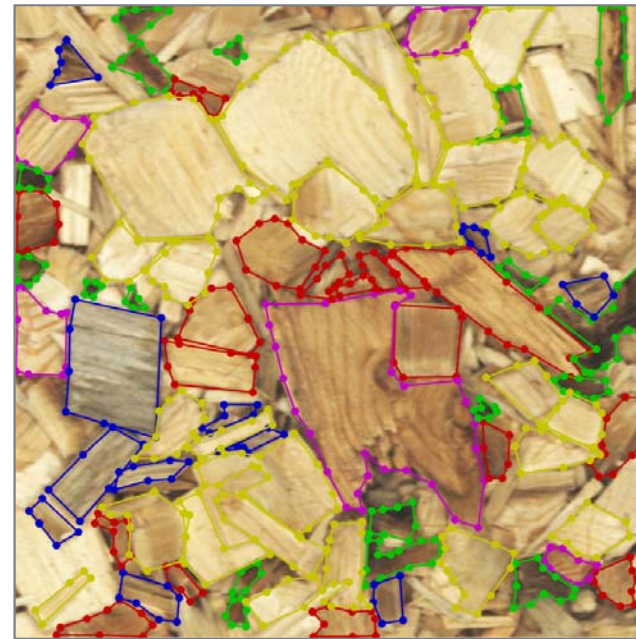
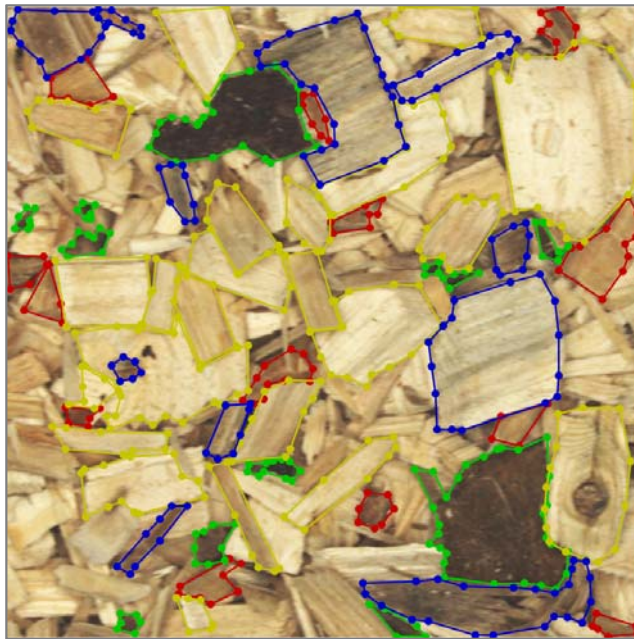


Deep Learning AI Model - Object Detection

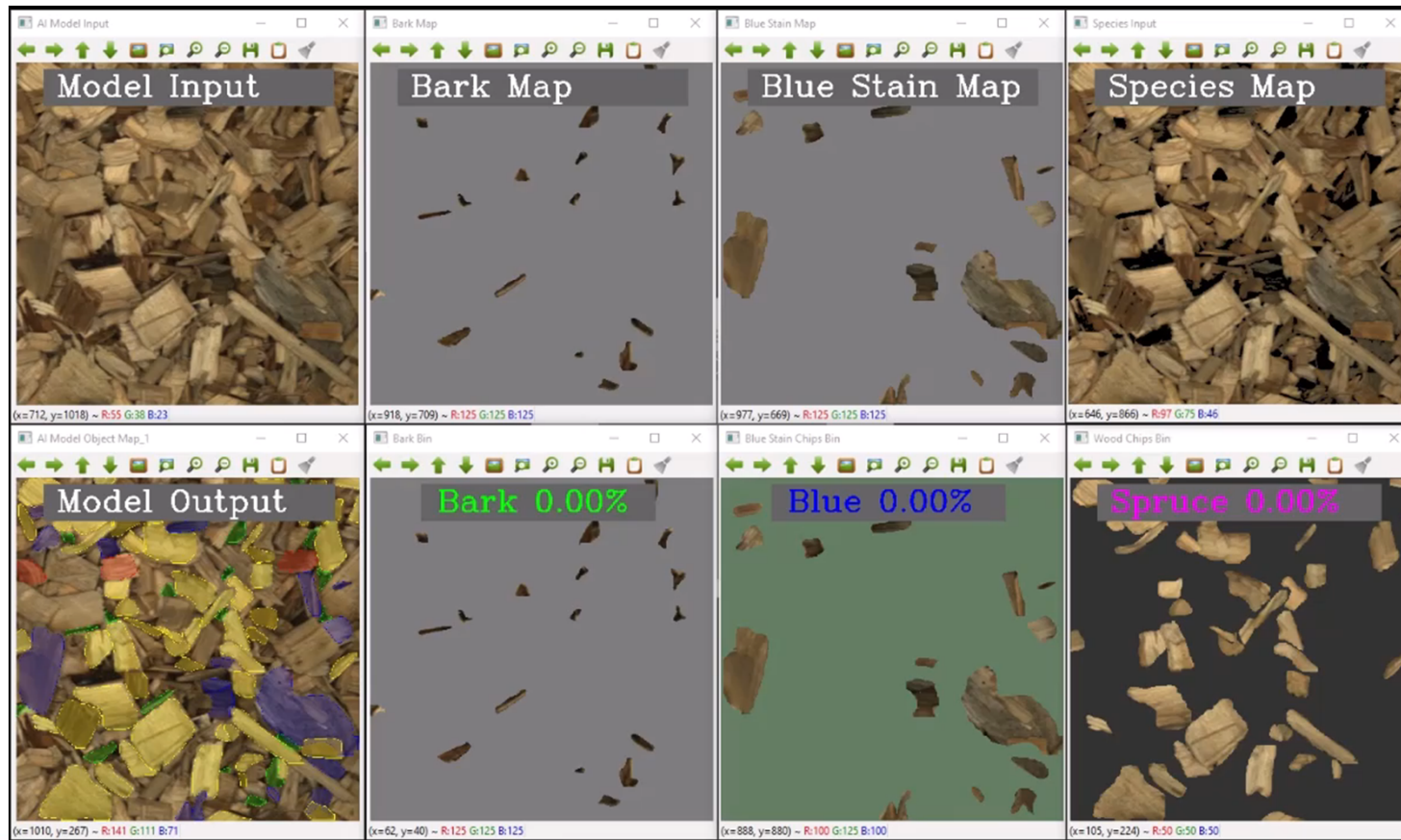
Mask R-CNN predicts object Segmentation masks on each Region of Interest (ROI) in a pixel-to pixel manner.



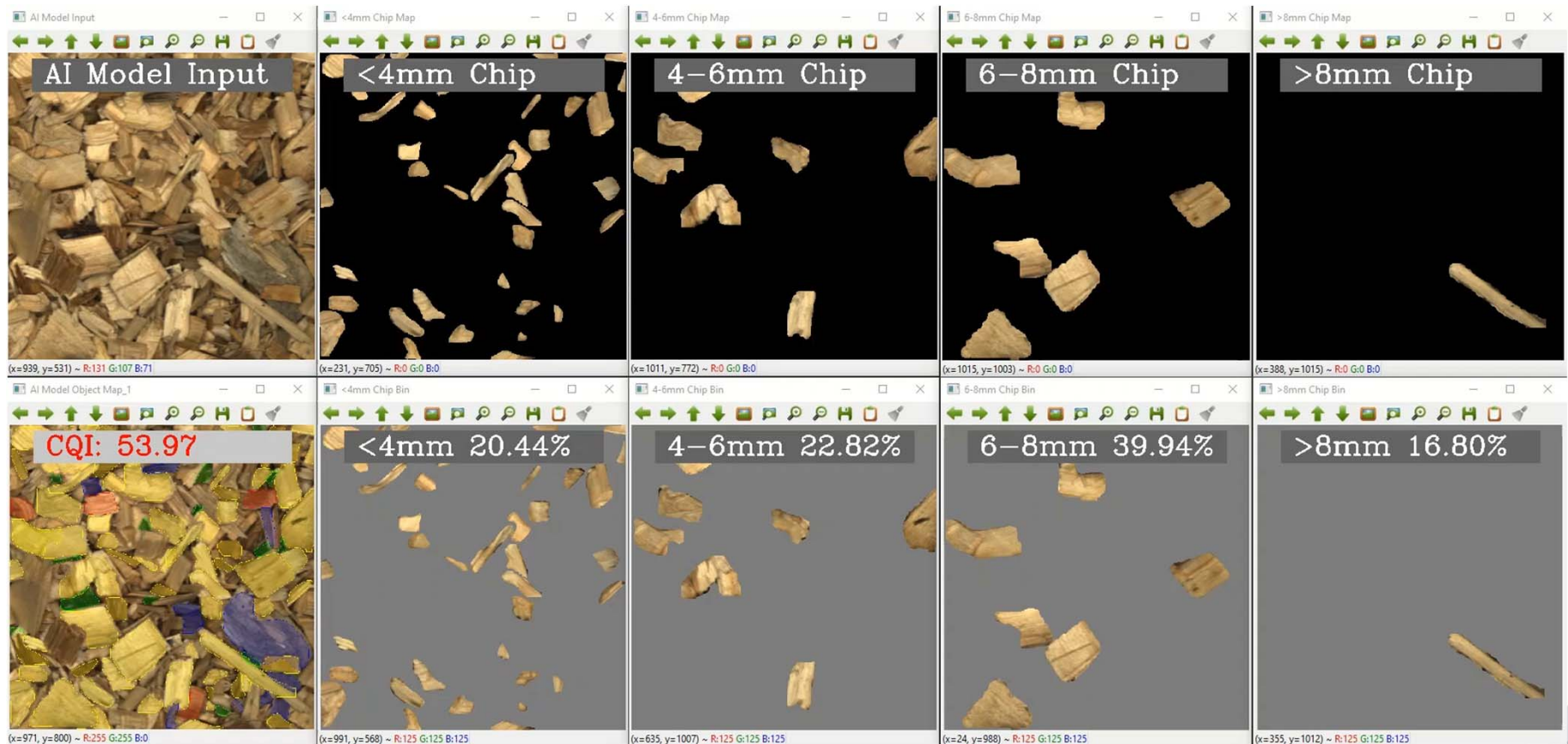
Deep Learning AI Model - Training Dataset



SMART CHIPS AI Model Live Demo – Bark, Species



SMART CHIPS AI Model Live Demo – Chip Size



SMART CHIPS Solution

- **SMART CHIPS is a reliable AI Cutting-Edge Technology well aligned with Digital Transformation**
- **AI Vision Solutions are customized to clients needs**
 - Mobile application for an OFFLINE Solution
- **Opportunities to change and pivot applications for further value-added solutions;**
 - OSB AI Vision Solution
 - AI Interface Analyzer (Oil Sands Industry)
- **Opportunity to implement optimization control solutions for further benefits;**



Questions ?

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