Teleoperation and Vision Systems: Tools for Loggers

Paul Milliken
To apply teleoperation and vision systems to create a safe and productive workplace
History to date

- FFR steep terrain harvesting programme
- Three products:
  - CutoverCam
  - CAB system
  - Full teleoperation
CutoverCam – Why?

• Safety
  • Dig-ins, hang-ups, mis-communication, greater use of grapple

• Productivity
  • Everything is easier with a good view
CutoverCam – How?

- Pan, tilt and optical zoom
- Light, robust and convenient
- Intuitive user interface with set-points
CutoverCam
CAB (Cab Assist Backline)
CAB (Cab Assist Backline) – Why?

- Productivity
  - One operator to control machines on both ends of the ropes
- Safety
  - No person required to be near the mobile tail hold machine
CAB (Cab Assist Backline) – How?

- Low latency video and audio
- Deadman switches
- Timeout and horn warning
- Basic telemetry
Ensure personnel are 13 metres from the maximum reach of the machine when operating.

Ensure fire mitigation plan is in place for the remote controlled machine.
Full Teleoperation
Full Teleoperation – Why?

• Safety
  • No operator in the cab
• Recruitment
  • Safe and comfortable environment
Full Teleoperation – How?

- Low latency
- Video and audio are critical
- All functions implemented that operator needs
- Emergency stop, deadman and timeouts
- Head-up display
Conclusions

- CutoverCam: Keeping breaker-outs safe
- Cab Assist Backline: Moving the tail hold from the hauler
- Full teleoperation: Isolating the operator from the hazard
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