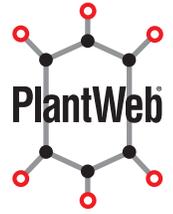


Alcan Achieves Early Start Up with AMS™ Suite: Intelligent Device Manager DeltaV™, and Rosemount® Devices



RESULTS

- Commissioning finished 10 months early
- 30% cost savings in termination costs
- Reduction of manpower needed for commissioning
- 30% savings in engineering such as loop drawings



APPLICATION

Bauxite to alumina mineral processing refinery

CUSTOMER

Alcan Bauxite and Alumina, Nhulunbuy (Gove), Arnhem Land, NT, Australia with Alcan Engineering, Brisbane, QLD, Australia. Both facilities are part of Alcan International, a world leader in bauxite and alumina.

CHALLENGE

Alcan was expanding its bauxite to alumina mineral processing refinery from 2.2 to 3.8 million tons using the Bayer process. The expansion included 6,600 FOUNDATION™ fieldbus devices, 1,100 Profibus devices, and 3,000 conventional devices on a large number of process modules. Alcan had a tight schedule to execute this project and a restriction on the number of people allocated for the project. They also had a mixture of greenfield and brownfield units operating in series and parallel that had to be integrated into a single operator console system.

Onsite work was expensive and offsite work was one third of the cost. Alcan's requirements included balancing cost, staying on schedule and minimizing the number of onsite workers.

“Thanks to FOUNDATION fieldbus we had 30% savings on engineering on e.g. loop drawings and maintaining the drawings up to date in the future also becomes easier.”

Manoj Pandya
Manager - I&C Engineering



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SOLUTION

To meet this challenge, Alcan decided to expand using a Pre-Assembled Module (PAM) concept. The PAM concept enabled all modules to be built offsite in Thailand and Vietnam. Alcan chose Emerson technology to help with pre-commissioning and basic function tests, such as valve stroking, to ensure the quality of the offsite work. By using DeltaV and AMS Device Manager to pre-commission FOUNDATION fieldbus devices, Alcan significantly reduced man-hours and experienced cost savings.

By maximizing the work offsite, only 100 devices had to be installed onsite with only 12 required buses. When the PAM modules arrived onsite, only a few bus wires per module had to be connected. The project was executed in 26 months instead of the scheduled 36 months, allowing Alcan to start up its first facility 10 months early.

Alcan used Rosemount 848T multi-point temperature transmitters for large pumps and agitators to reduce sensor wiring length by mounting near the sensor, reducing the number of transmitters by using multiple channels, and the amount of fieldbus networking hardware by using fewer devices. They also used a Rosemount 848L logic transmitter mounted near the pneumatic cutting tool cylinders that are fired to punch a clear hole removing scaling build up on pressure taps, reducing the length of the wiring.

Alcan also used the experience of Emerson engineering experts to help with the planning, pre-commissioning, and configuration. According to Manoj Pandya, "We could not have met cost and schedule the conventional way."



"We are not just putting in fieldbus, we are changing the maintenance practices."

Greg Daniels
Control Systems Leader

**Emerson Process Management
Asset Optimization Division**
12001 Technology Drive
Eden Prairie, MN 55344 USA
T (952) 828-3206
F (952) 828-3033
www.assetweb.com

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