

LANSCÉ Wire Scanner Upgrades

Heather Leffler

Dr. Scott Baily
Lucas Montoya

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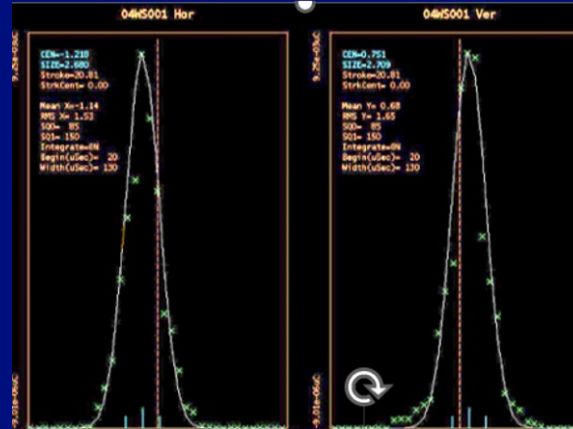
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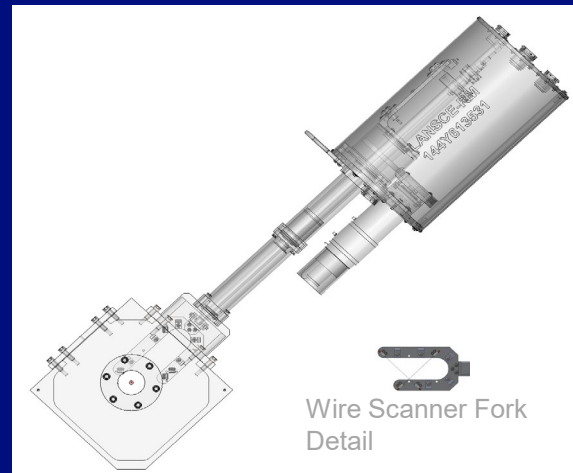
CIC-9: RN91-240-309

Wire Scanner Overview

- Electro-mechanical beam interceptive device
- Provide cross sectional beam profile measurements
 - Vertical and horizontal scans
 - Measurements follow Gaussian profile
 - Provides beam shape, and position
- Measurement allows operators to adjust parameters such as acceleration, steering, and focus to provide effective beam delivery to targets



Legacy Java Wire Scanner Application



Wire Scanner Mechanical Assembly

Instrumentation Chassis



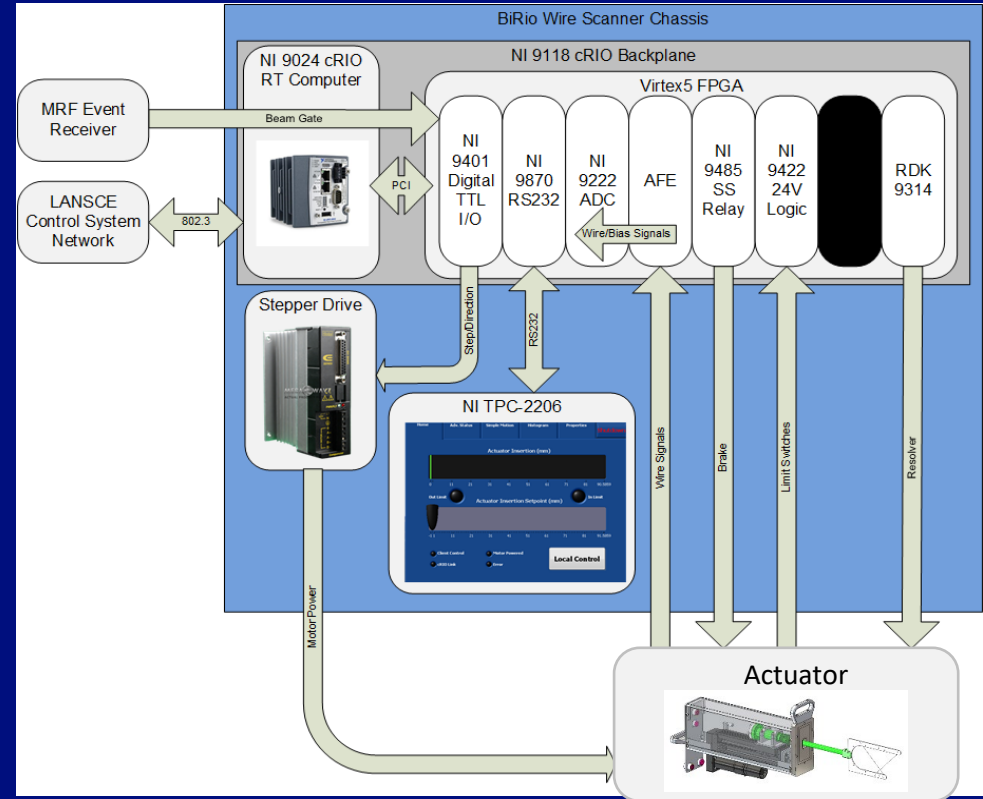
Instrumentation Chassis



Wire Scanner Mechanical Actuator

Instrumentation

- Consists of electronics that control/read the mechanical actuator components (motor, brake, limits, position feedback)
- Obtains beam waveform data from sense wires. Waveform is amplified/gained and integrated.
- Resolver feedback closed loop system
 - Profile taken $70\mu\text{s}$ after beam pulse



Upgrades

- Updated embedded controller to an NI-9048 (NI Linux Real time)
- Updated embedded control software (LabVIEW) code
- New expert screens
- New python application is planned next

