



trace r&d | 2009

Diamond/Diamant

Canada 

Platinum/Platine



Gold/Or

Manitoba 

 Ontario



Silver/Argent

Alberta

IBM[®]


ManitobaPork

CANADIAN
Cattlemen
THE • BEEF • MAGAZINE

Bronze/Bronze

Alberta Farmer Express
Canadian Poultry Magazine
Canadian Wheat Board /
Commission Canadienne du blé

Consumer & Marketing Demand Network
Gallagher Canada
Grainnews
Intelliware Development Inc.

Manitoba Co-operator
On Trace
Trace it Solutions

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Wide Alley Scanning Systems

Capturing Livestock RFID at the speed of commerce

Paul Laronde



Trace R&D 2009 – Winnipeg, Manitoba

Wide Alley Scanning

Ontario Livestock Exchange (OLEX)



- Livestock Market – 2400 head capacity
- Waterloo, ON
- multiple RFID readers installed
- two Wide Alley Scanning systems



Wide Alley Scanning

What is a Wide Alley Scanner?



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Wide Alley Scanning

Definition:

Wide Alley Scanner

Livestock RFID reading system comprised of a redundant array of readers that permits animals to move several abreast, at the speed of commerce, without conforming to a traditional nose-to-tail orientation.



Wide Alley Scanning

What is *the speed of commerce*?



Wide Alley Scanning

Definition:

Speed of Commerce

Livestock Marketing Association :

...processing and marketing cattle on sale day within just a few hours, minimizing weight shrinkage, protecting the safety and welfare of the market employees and the livestock they handle and then moving the animals on (to) the next destination with a minimum of delay



Wide Alley Scanning

Definition:

Speed of Commerce

USDA:

... Transponders must be reliably machine-read at a rate of 95 percent without regard to orientation by a standardized dual HDX/FDX reader, as cattle move by in a single file passage at 4 mph (1m/sec).



Wide Alley Scanning

- Wide Alley Components:
 - Multiple redundant readers
 - » Synchronized – if reading HDX
 - » Auto tuning - *on-the-fly*
 - Multiple redundant panel antennae
 - » 2' x 4'
 - » Phase orientated
 - Software



Wide Alley Scanning

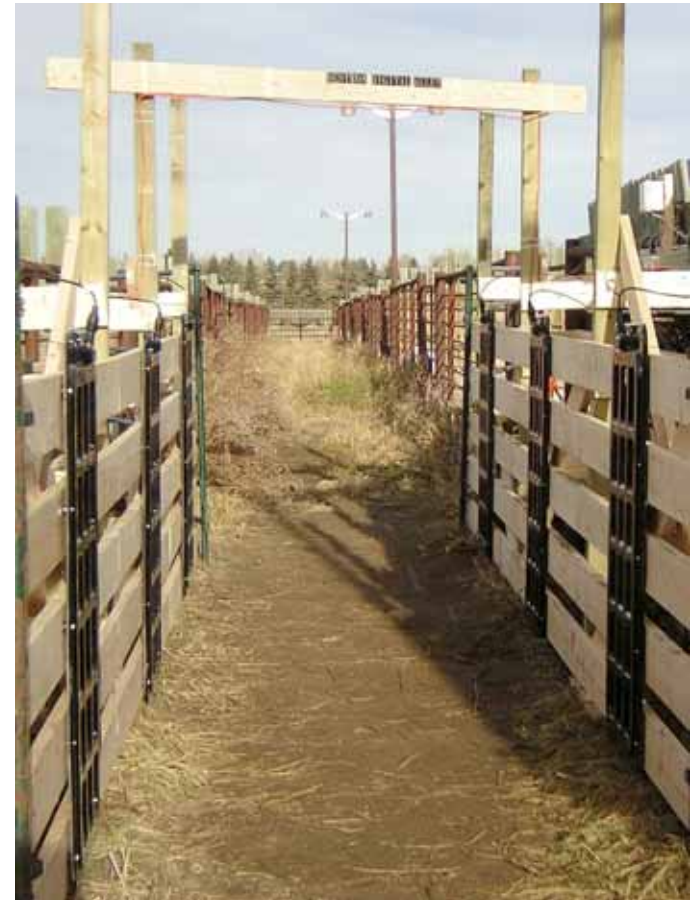
- Not a multi-alley scanning system...



Wide Alley Scanning

- Background

- 2006 Lacombe Research Centre, Lacombe
- Gen I wide alley system
- 58 in. single wide alley
- 86.9% read rate (2400)



Wide Alley Scanning

- Gen II
 - Major changes...
 - 2009 OLEX - Waterloo
 - Gen II wide alley system
 - 60 in. single wide alley
 - 99.5% read rate (240)



Wide Alley Scanning

- Redundant scanner diagram



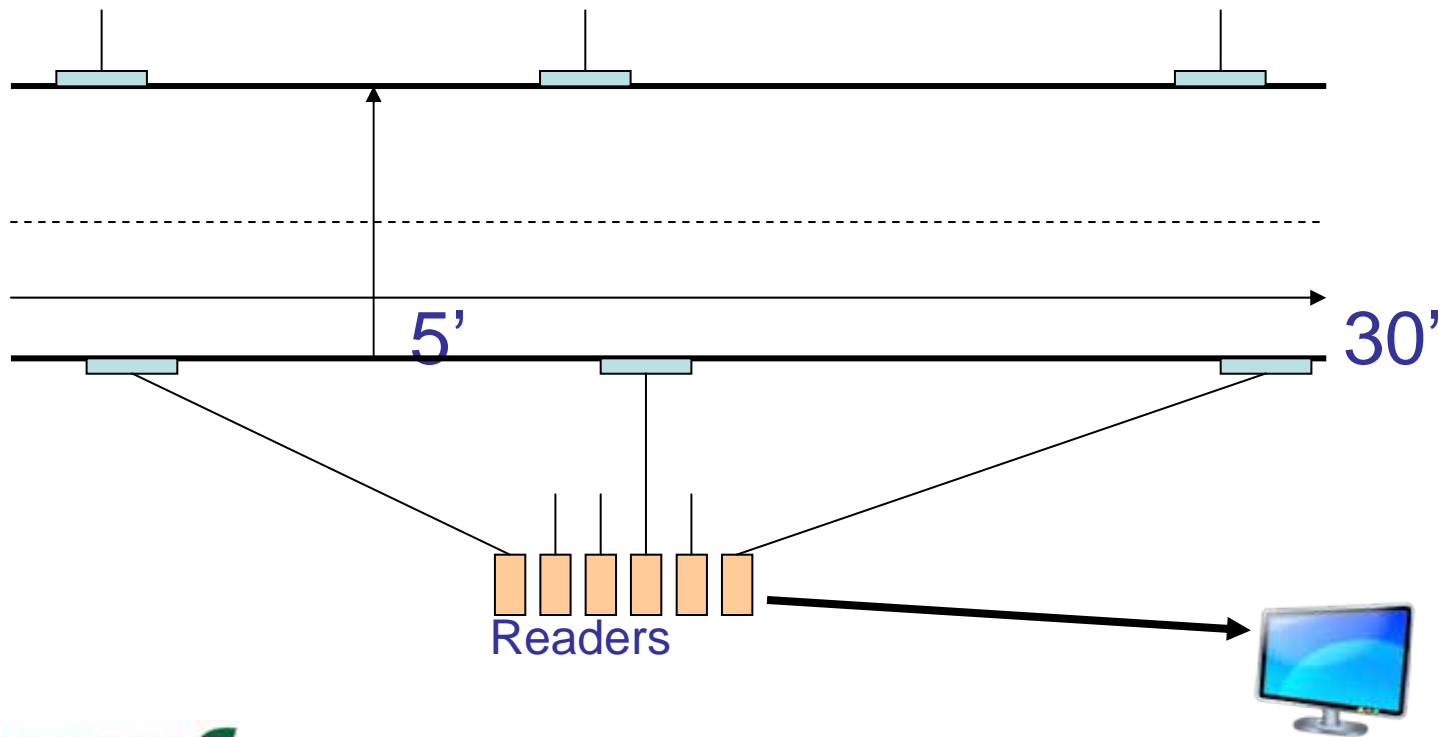
Wide Alley Scanning

- Redundant scanner array installation



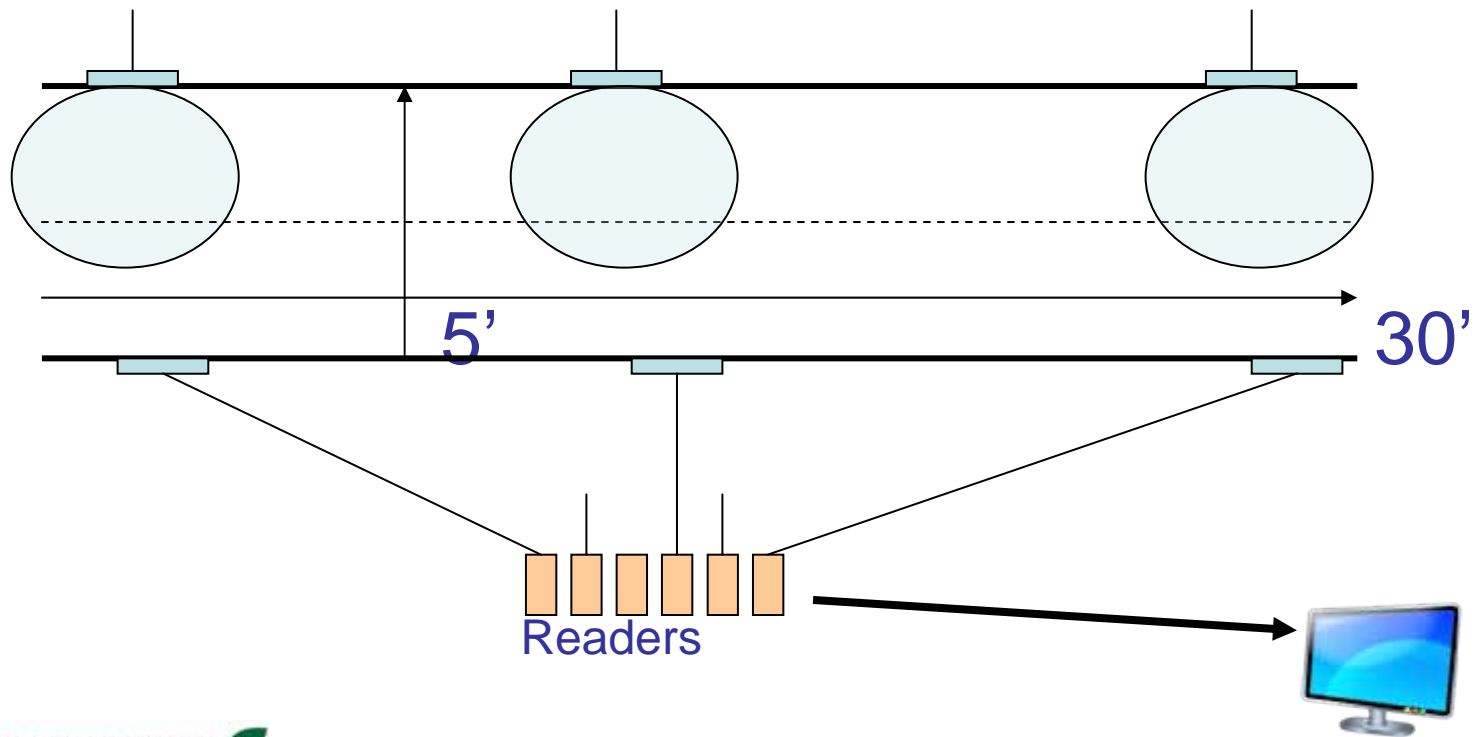
Wide Alley Scanning

- Typical Wide Alley Scanner Layout



Wide Alley Scanning

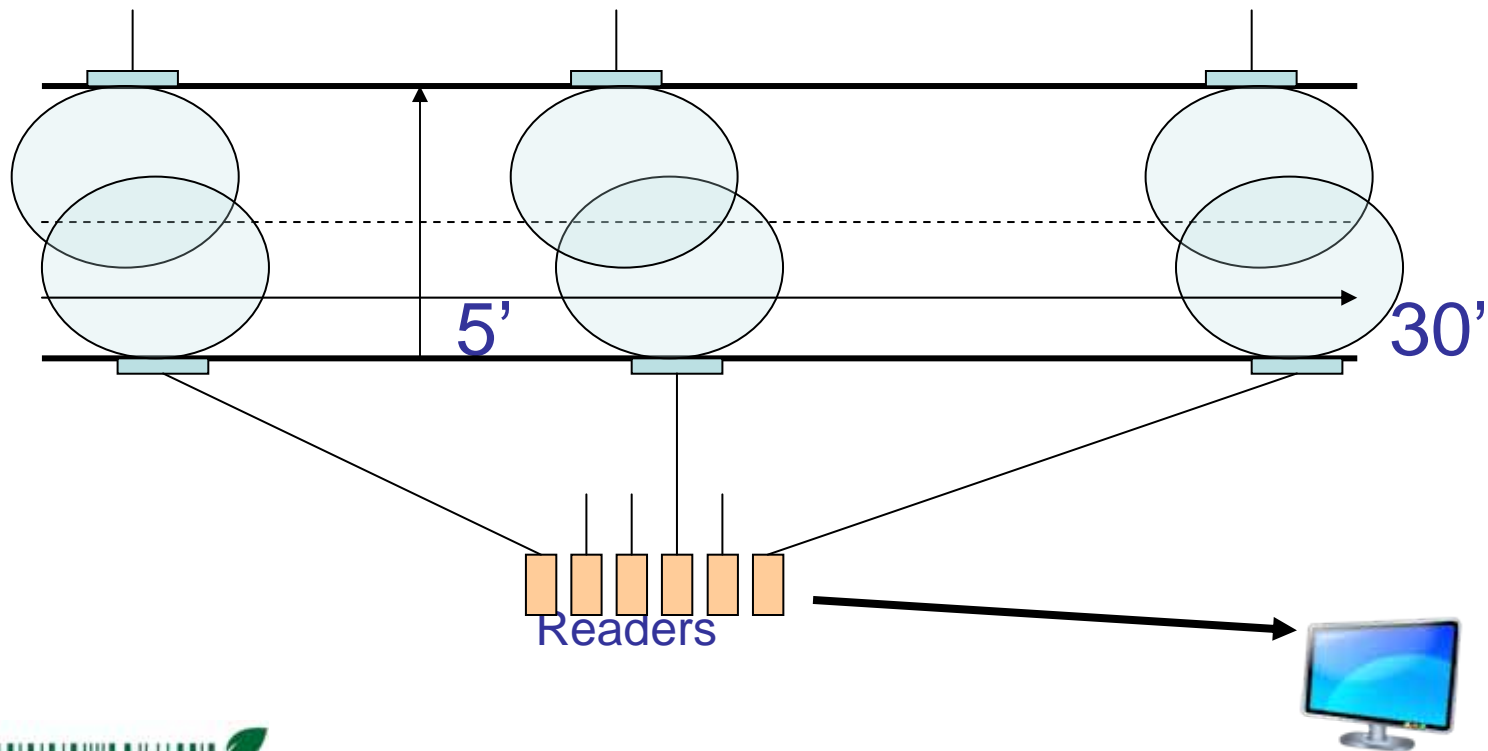
- Typical Wide Alley Scanner Layout



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Wide Alley Scanning

- Typical Wide Alley Scanner Layout



Wide Alley Scanning



OLEX April 27/09

31 animals scanned: 28 sec. 100%rr



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Wide Alley Scanning



OLEX April 27/09

19 animals scanned: 11 sec. 100%rr



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Wide Alley Scanning

- Factor's affecting performance:
 - Layout
 - Length of alley
 - configuration
 - RFID tags
 - Quality of signal
 - Strength of signal
 - Reader Tuning
 - Auto tune – 'on-the-fly'
 - Infrastructure
 - Construction quality/sturdiness
 - Support
 - Availability
 - Quality of personnel



Wide Alley Scanning

- Wide Alley Scanners – the future:
 - Technology enhancements to 8' widths
 - MPX technology – lower reader costs
 - Single technology scanning – more read cycles = better read rates
 - Animal behavior – input to designs
 - Higher quality tags – education at all levels



Wide Alley Scanning

- Thank you!
- Thanks to the staff and management at the Ontario Livestock Exchange.

