Motion caveats on LabVIEW RT / cRIO

- There are many Motion Control solutions that can be implemented with LabVIEW on Windows, or sometimes LabVIEW RT targets (unless it uses a Windows dll).
- They usually imply basic start / stop commands with target position and speed selected upfront, and the third party drive deals with the whole trajectory control
- There are applications where more intricate control requirements are needed, where some algorithm on LabVIEW RT has to interact with and modify motion trajectories with low latency, with full control over real time speed and position (custom closed loop scenarios)
- These should in principle be possible with low latency industrial communcation buses and drives supporting them. However currently LV RT on cRIO is not able to reliably deliver stable low latency communication with CANopen.
- EtherCAT solutions only work after deep manual tweeking of config files, some bad compatibility issues seem to remain in NI EtherCAT implementation.

  In both cases (CANopen and EtherCAT), not much can be done on the user side to address this, and NI is currently not supporting these issues at all.

Webinar June 4, 2025

My question :

Is there anything on the roadmap regarding motion control ? Implementing third party drives with EtherCAT or CANopen can be really painful, if possible at all, and NI is not providing any support. Any intent to support this better in the future ? For instance, now that NI is part of Emerson, Emerson has servo drives that I think can be controlled through EtherCAT. Is NI going to integrate these in LabVIEW, and truly support these integrations ?

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Answer from NI / Emerson :

Yes! We know that a lot of the tools in the industrial control / communications space need an update, and we're working to add R&D resources (starting in July!) to improve the experience on lots of these protocols. Our initial focus is on EtherCAT, Ethernet IP, and OPC UA. While we aren't adding focused support for motion control, the improvements to those protocols will help with this problem. You will be able to see this change on our public SW roadmaps the next time we update them!

(https://www.ni.com/en/shop/software-portfolio/software-roadmaps.html)

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Webinars

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- **June 11**– What's New in Semiconductor and Electronics
- **June 18**– Test Anywhere with NI FieldDAQ: Exclusive Launch Event
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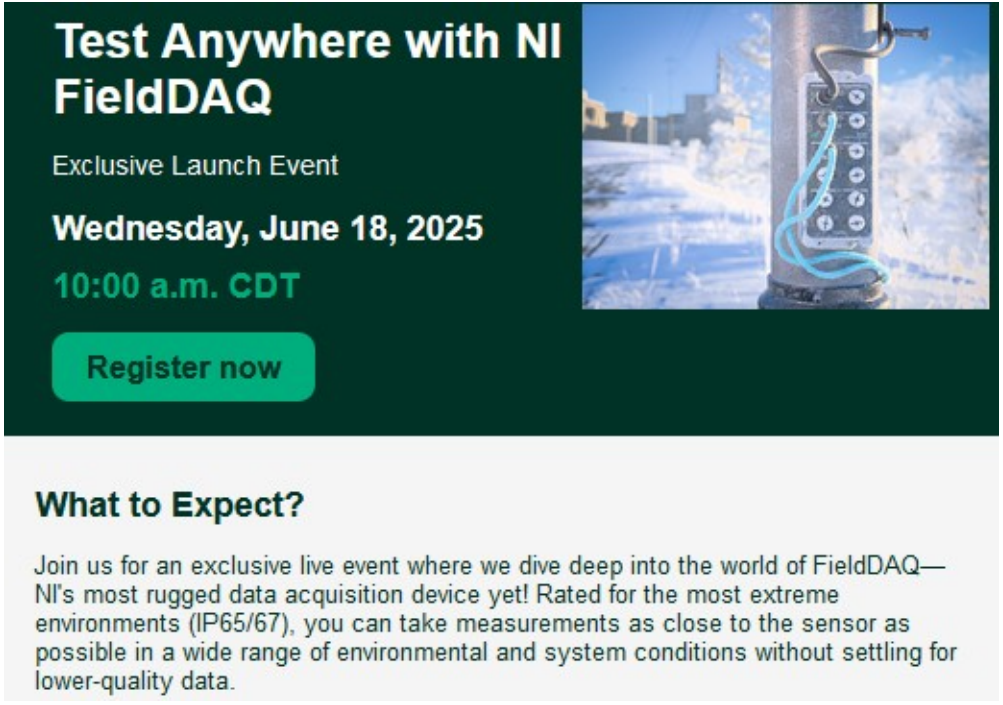

My opinion : awesome interactive events, live with NI experts !