



MicroC3 Industry Advisory Board
Meeting #1
Friday, September 8, 2023

Agenda

- Welcome and Introductions
- MC3 Overview - Srdjan
 - Successful outcome is accurate prediction of microgrid operation to select right-sized components to achieve desired performance goals.
 - Design tool, run-time tool. Tune droop and inertia gains for each der.
 - Questions
 - How is this diff from existing modeling tools? Most only solve power dispatch rather than optimization.
 - Dmitry. Does algorithm work on multi microgrid design or just one? Goal is that it can handle network microgrids. Would also consider power flows and line capacities.
 - Dmitry. How to implement tsn with modbus devices? Single board computer for each resource. Board translates comms to RIAPS for TSN. Gabor shared nodes slide.
 - Dmitry. Standard for comms now with substation is 61850 profiles. Gabor noted TSN is low level. Looks like UDP at software level.
 - Dmitry. Semantic modeling for data exchange? Gabor said we did not standardize the message types. Similar to protobuf. RIAPS can adopt standard decoders as needed. Dmitry mentioned OpenFMB.
 - Harish. What dependencies and limitations of platform? Development environment is ubuntu virtual machine. Any 64bit pc or workstation would work. Field nodes run 32 bit ARM cores on beaglebone. TI64x is new board. For field deployment, we need industrial enclosures backup power, encryption chip, 64 ARM chip, and 1gb memory.
 - Harish. What about co-design? Toolsuite is configurable. Start with one line and initial sizing. Tool runs optimization and right sizes DER.
- T2M Overview - Ken
 - Matt. Is our go to market plan for licensing? Ken noted that is up for discussion. Also noted that much of RIAPS is open source.
- Next Steps
 - Share recording, post minutes

Attendees

- Srdjan Lukic, PhD, NC State
- Gabor Karsai, PhD, Vanderbilt
- Ken Dulaney, NC State
- Harish Suryanarayana, ABB, principal scientist. Power electronics power conversion. Mgs, bess, etc.
- Trent Miller, Duke Energy. Dist gen team. DER. 9 years in role. Interconnection for dist. Getting into mgs and bess and islanding.
- Luke Ligon, Duke Energy. Luke on same team with trent. 1.5 yr. Came from generation.
- Dmitry Ischchenko, Eaton. Chief engineer. Energy sys team. Strategic r&d for grid intelligence. Dist grid mgt. DER, mgs, bess, protection.
- Jackie Baum, EPRI. der integration. Tech lead for mg and derms.
- Tim Gubitz, NCEMC.
- Matt Furnari, Schneider. Power products division in SE. works with mg cto on cyber. Primary focus is looking to other tech like dc dist.
- Matt O'Donnell, Typhoon HIL. dir of grid mod solutions.