

EDGE X FOUNDRY™

# TSC Meeting

March 06, 2019



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# Meeting Logistics

Time: March 06, 2019 7am PST – 8am PST

Join from PC, Mac, Linux, iOS or Android: <https://zoom.us/j/983155298>

Or iPhone one-tap (US Toll): +14086380968,983155298# or +16465588656,983155298#

Or Telephone:

Dial: +1 408 638 0968 (US Toll) or +1 646 558 8656 (US Toll)

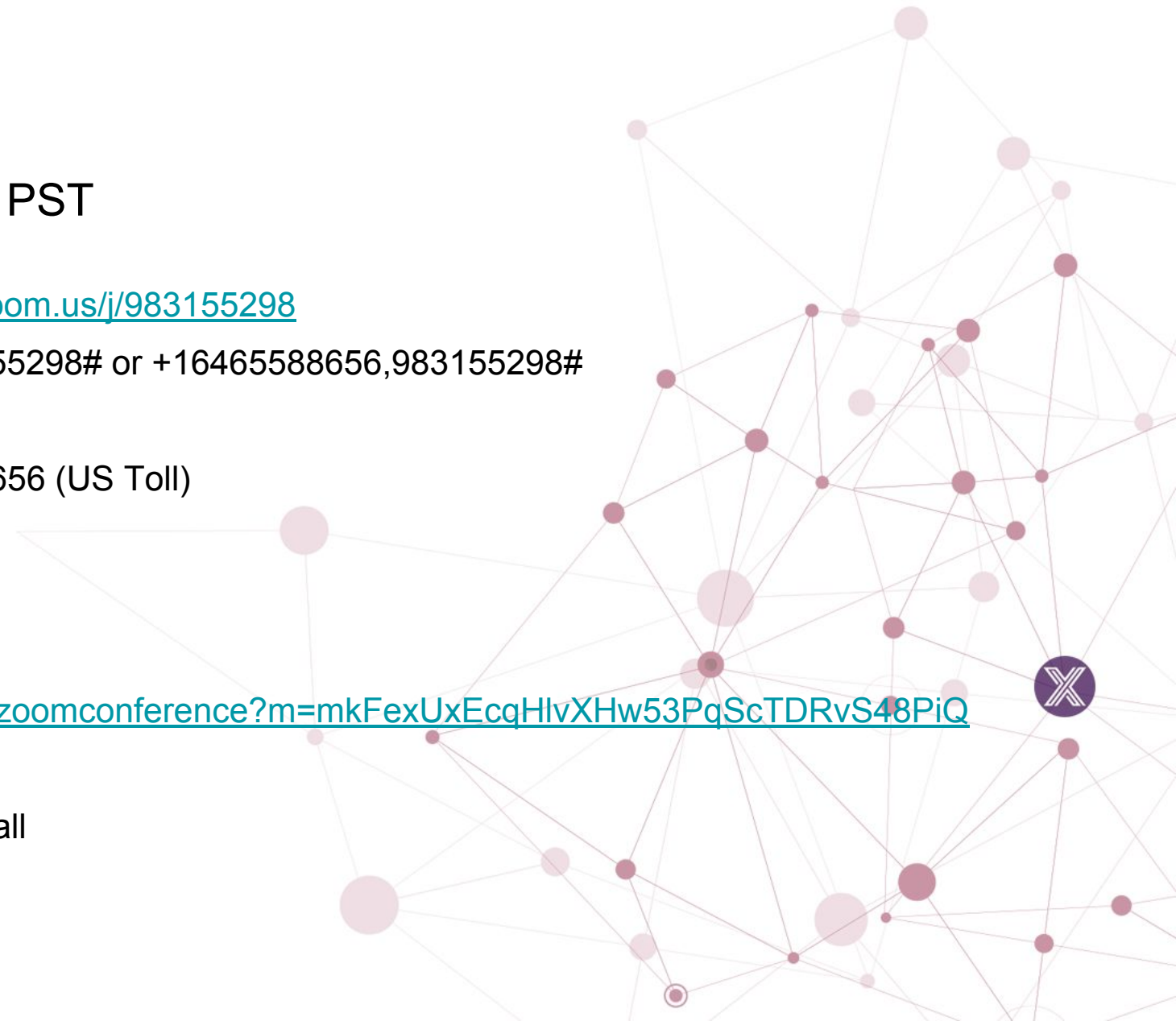
+1 855 880 1246 (US Toll Free)

+1 877 369 0926 (US Toll Free)

Meeting ID: 983 155 298

International numbers available: <https://zoom.us/join?j=983155298>

\*\* TSC calls are recorded and added to Wiki post-call



# TSC – Members Present Today

<u>Company</u>	<u>Name</u>	<u>Email</u>
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ForgeRock	David Ferriera	<a href="mailto:david.ferriera@forgerock.com">david.ferriera@forgerock.com</a>
Mainflux	Drasko Draskovic	<a href="mailto:drasko@mainflux.com">drasko@mainflux.com</a>
Intel	James Gregg	<a href="mailto:james.r.gregg@intel.com">james.r.gregg@intel.com</a>
Mainflux	Janko Isidorovic	<a href="mailto:janko@mainflux.com">janko@mainflux.com</a>
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Samsung	Moonki Hong	<a href="mailto:moonki1.hong@samsung.com">moonki1.hong@samsung.com</a>
Dell	Randy Thompson	<a href="mailto:Randy.T@dell.com">Randy.T@dell.com</a>
IOTech	Steve Osselton	<a href="mailto:steve@iotechsys.com">steve@iotechsys.com</a>
Canonical	Tony Espy	<a href="mailto:espy@canonical.com">espy@canonical.com</a>
Dell	Trevor Conn	<a href="mailto:Trevor.Conn@dell.com">Trevor.Conn@dell.com</a>

Current quorum = 6 members

*Note: Quorum for TSC meetings requires at least fifty percent of all voting members of the TSC to be present. The TSC may continue to meet if quorum is not met, but will be prevented from making any decisions at the meeting. Except as provided in Section 7.c. and 8.a, decisions by vote at a meeting require a majority vote of those in attendance, provided quorum is met. Decisions made by electronic vote without a meeting require a majority vote of all voting members of the TSC.*

# Today's Agenda

- WG Updates
- Updates on Edinburgh deliverables, in-jeopardy, & misses
- Next TSC F2F
- Upcoming Events
- AOB



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# Work Group Updates

Chairs

# Working Group Chair Updates

- Around the horn
  - Core/Supporting - Trevor
  - Applications - Janko
  - Device Services - Steve
  - Test/QA - Andy
  - DevOps - James
  - Security - David
  - System Management - Jim
  - Certification - Randy
  - Vertical Solutions - Moonki
  - Developer Outreach - Michael



# Core Working Group (6-Mar-19)

- Removal of legacy metadata/scheduler endpoints queued up
  - Issue #20 in go-mod-core-contracts
  - Issue #1144 in edgex-go
- Device Service SDK Feature Support Merged
  - Rework of Device Addressable to Protocols
    - Supports mechanism for addressing a device via multiple channels
  - Support for Auto-generated Event Definitions
    - Contract and persistence
- Redis
  - Andre has been temporarily re-assigned
  - Trevor is now working on this
    - Mongo decoupling changes have been integrated -- metadata, core-data, export
    - Implement and test remaining persistence
  - Support-logging (Andre) and support-notifications (IOTech)
    - Andre possibly back on task week of 18-March



# Applications WG Update (6-Mar-19)

Work on the Application Function SDK is progressing according to plan.

- application-functions-sdk repo is in edgexfoundry organization. Thanks Mike and Jim!

Code contributions for Application Functions SDK:

- #22 Restructure files to be internal
- #23 Simple MQTT Export
- #24 Support for custom mime type
- #25 System mgmt agent integration - WIP
- Initial Message Bus abstraction PR is submitted - Please take a look <https://github.com/edgexfoundry/go-mod-messaging/pulls>

Resources for CBOR in the Export services - Mainflux resources will be available on April 8.

# Device Services WG Update (6-3-19)

- Go SDK
  - Virtual device service up for review in holding repository
  - Old event scheduling mechanism removed
  - Adding support for new protocol properties design
- Vote on default encoding of floating point values
  - 3/2 for base64 encoding “MS4yMw==” as opposed to “1.23”.
  - Will be breaking effects to upstream services and applications
- Concern that initial set of coverage tests shows low coverage
  - Results to be reviewed
  - New virtual device will enable additional test coverage

# Known Connector Development

<https://bit.ly/2tWH9Lv>

Available

In development

- **Ethernet– Industrial and Building Automation:**

- Modbus TCP
- BACnet/IP
- OPC DA
- OPC UA
- EtherNet/IP
- EtherCat
- Profinet
- Siemens s5 and s7 Protocols
- Omron FINS
- Zigbee
- KNX
- IOTivity

- **Ethernet/Wireless – General Purpose**

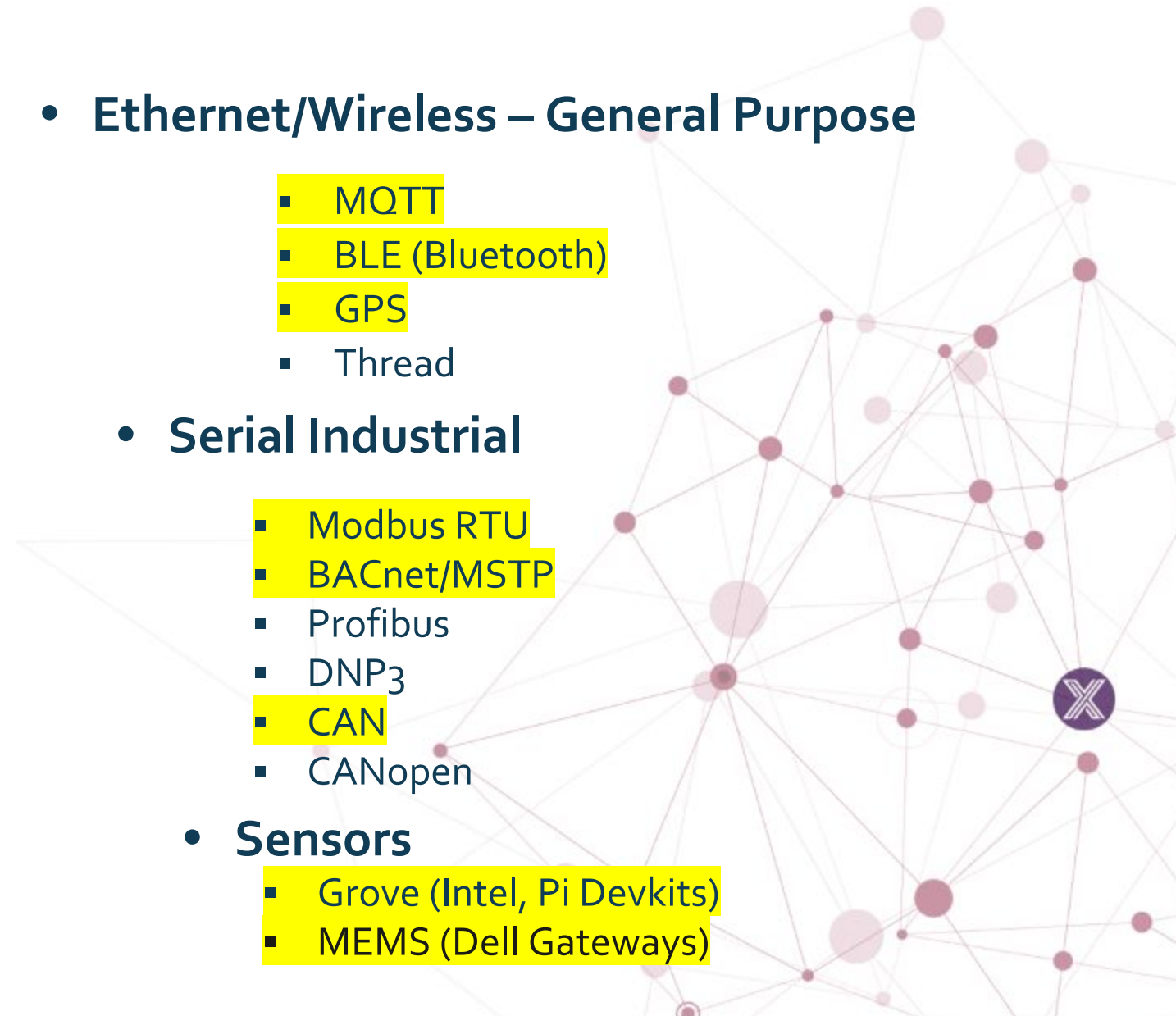
- MQTT
- BLE (Bluetooth)
- GPS
- Thread

- **Serial Industrial**

- Modbus RTU
- BACnet/MSTP
- Profibus
- DNP3
- CAN
- CANopen

- **Sensors**

- Grove (Intel, Pi Devkits)
- MEMS (Dell Gateways)



# Test/QA WG Update (03-06-19)

- Fixed Fixed black box test issues [#169](#), [#170](#), [#175](#)
- Merged PR [#167](#), [#171](#), [#172](#), [#173](#), [#176](#)
- Preparing JMeter docker image for automated performance tests
- Completed new black box test scripts for the new Device Profile changes and Go Virtual Device Service
- Prepared the prototype of system integration framework using Cucumber JVM - will initially be used to support Device Service testing
  - Will demo prototype at the next QA WG meeting
  - The initial sample of test on device-modbus-go could be delivered in Edinburgh if the direction is confirmed by QA working group
- Edinburgh objectives
  - Better visualization/dashboarding (Allure) of test results (complete)
  - Automated capture of resource metrics to monitor performance - work progressing (on track)
  - Security test automation - implemented by Security WG (on track)
  - Code contributors will now be required to supply additional or updated blackbox tests (complete)
- Next QA/Test meeting Thursday 7th March, 4pm PST

# DevOps WG Update (03-06-19)

Several User Stories currently being worked in current sprint.

- New Intel contributors - Ernesto Ojeda / Lisa Ranjbar (vote was recorded offline but mentioning here today)
- New Sandbox access - Tyler Powers
  
- Starting work to figure out the automation required for release versioning (i.e. tagging) go modules
- Await completion of the LF Infrastructure - landing of the EdgeX TIG stack.
- New Scope for Performance testing
- **New Risk:** Sigul is being positioned to be used for signing release artifacts using Jenkins EdgeX build automation. This is Linux Foundation tooling. Additional work has been identified that requires sigul to be enhanced to enable signing of git tags and Docker images. This work was not scoped for Edinburgh.Help Needed from Linux Foundation / developer resources.

Next DevOps WG meeting - Thursday 7AM PST

# Security WG Update (03/6/19)

Feature	Status for Edinburgh
Automated Testing	Green (done - more to test but something in place for Kong and Vault)
Delhi fixes	Green (done - some additional cleanup ongoing but nothing critical)
Vault/Kong Documentation	Green (done for Delhi release, may need to relook for Edinburgh)
Vault paths/policies	<b>Yellow</b> Dell team committing two resources to get critical secrets like DB secrets stored in Vault. Stretch for current Edinburgh freeze date
HW based secret storage	Red (hoping to leverage larger community for assistance - probably push to Fuji)
Service to service authn/authz design proposal	Red (push to Fuji)
Kong/Vault upgrade	<b>Yellow</b> Tingyu explored both; Vault was upgrade to 1.0.2 with Delhi. Kong 1.0.3 (from 0.13) has a bug and working this with Hashicorp.
Protecting Vault Master	<b>Yellow</b> Vault's master token is currently stored in the clear in the docker volume

# System Management WG Update (3-6-19)

- Done - Start/stop/restart functionality (with executor)
- Done - CPU usage metrics added to metrics
- Done - SMA APIs added to application services/functions SDK (thanks Lenny and Intel team)
- Working - SMA APIs added to Go SDK
- Working - Add health/status check of the services to the SMA
- SMA APIs added to C SDK



# Certification WG Update (3-4-19)

- Discussion around Project definition document (Google docs)
  - Link on Certification WG wiki
- Need more participation from developers/QA experts on technical aspects of Certification eval tests
  
- Meetings are on Mon at 7am PST
  - (next week USA will have daylight savings time change! +1 hour)
- Link to doc, minutes, and recording available on wiki

# Vertical Solutions WG Update (3-5-19)

- Commerce Project call (Mar. 5th)
  - Gathering calendar poll (Bi-weekly morning / afternoon every 2 weeks)
    - Morning : <https://doodle.com/poll/gptd33cqhh55ipm6>
    - Afternoon : <https://doodle.com/poll/ngtzw88e926guwah>
  - Gathering initial list of use cases
    - Computer vision - people counting, basket validation / loss prevention, replacing UPC with RFID EPC, smart shelf and smart peg (inventory optimization)
    - Capability : RFID inventory, digital surveillance NVR event publications, computer vision “virtual sensors”, federating EdgeX stacks, permissions-based data sharing
  - Value chain investigation, call for guest speakers, etc.
  - **Next agenda** : Computer vision device service proposal and so on.

# Developer Outreach (03-06-19)

- More Delhi docs merged into master
  - Looking for advice on how to handle this better in Edinburgh
- Pilot tested using [wiki for meeting minutes](#)
  - Fewer steps to publish minutes
  - Makes minute notes searchable in the wiki
- Forum post on [troubleshooting Docker networking](#)
  - Need more Forum content before making a public push



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Edinburgh Release

# Proposed timeline

- Freeze: April 1
  - Create new branch; update version numbers on master, etc.
  - Testing and bug fixes between 4/1 and 4/22 (21 days)
- Release date: April 22 (Monday)
- EdgeX F2F: April 29 - May2
  - Fuji planning

# Edinburgh Deliverables

## •General

- Improved on-boarding for EdgeX users
- Move to Modules v. Glide
- EdgeX database-using services are refactored to be more loosely coupled to the persistence mechanism
- Poor-mans tracing; correlation ID in place

## •Scheduler service refactor

## •Config / config seed refactors

- R/W properties
- Config seed preservation on restart
- Update to Consul 1.2.3

## •Application services first implementation

- Export Service replacements long term

## •Partial Device Profile refactor

## •Move to Go 1.11 (actually now 1.12)

## •Move to Slack

## •Security documentation (API Gateway & secret store)

## •Device Services

- Devices Services with Delhi SDKs: Modbus, MQTT, **virtual device** & SNMP
- SDK tutorials and examples (device-random and more)
- Support for local auto events

## •Certification process definition

## •System Management v2

- Addition of CPU metric
- System management start/stop/restart of services via executor
- SMA APIs in all services and SDKs
- Service health status checks

## •Addressable relook

- Separate DS addressable; making it embedded

## •Visualization/dashboard of test results

## •Automated security blackbox tests

## •Support/contract via LTS and release/version policy

## •**Vault upgrade to 1.0.2**

# Beyond Edinburgh Deliverables (expectations +)

- Installment of new DevOps chairman
- Hundreds of bug fixes and improvements
- Code coverage analysis (exceeding Edinburgh expectations)
- DevKit release
- Grove DS and tutorial/demo
- EdgeX booth Demonstrator
- Several developer outreach initiatives
  - Discourse channel
  - Better docs and getting started guide organization
  - More getting started guides
- RP3 tutorial
- Usage and views stats
- New videos
- Inclusion in LF Edge



# Edinburgh Deliverables in-jeopardy

- Support the ingestion, use and export of binary data in CBOR format.
- An automated performance framework to continually check the performance
  - Elk v TIG stacks
- Load/stress tests (stretch)
- Kong upgrade (Hashicorp issue?)
- Redis implementation for all database using services

# Edinburgh Misses

- DS and DS SDKs

- BACNet, BLE Device Service implementations using the Delhi SDKs.
- Reading cache (in SDKs)
- Dynamic discovery
- Unit testing

- A new rules engine to replace Java/Drools ref implementation

- Metadata blacklist (Whitelist)

- For use with device service & device delete

- Full Device Profile refactor & simplification

- Some refactoring was completed

- Security

- Vault implementation design (namespaces) & DB Secrets in Vault - working and may have something

- Service to service AuthN/AuthZ requirements documented along with a preliminary design

- HW based secret storage

- Release Manager

- Policies in place but role not filled

- Swagger documentation (stretch)

- Sys Management translator (stretch)

- 12 Factor apps

- Loss of Security WG chairman and 2/3 of the work force in Security WG



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EdgeX TSC F2F Meetings

# ONS - call for participation in panel

LF Edge is seeking volunteer to be on panel

<https://events.linuxfoundation.org/events/open-networking-summit-north-america-2019/program/schedule/>

Apr 3-5 San Jose

Connect with Brett, Jim or Keith if you can be there and would like to participate.

# EdgeX TSC F2F Meeting(s)

- **29 April - 2 May, 2019** -- Location Seoul, South Korea -- [Wiki page](#)
    - Technical Business Discussions + EdgeX 101 on Monday, April 29
    - Architect's Day / WG Breakout Sessions + Social Event on Tuesday, April 30
    - Technical F2F - Day 1 + Dinner Reception on Wednesday, May 1
    - Technical F2F - Day 2 on Thursday, May 2
  - **RSVP at <https://goo.gl/forms/oMptkNU90RRxhK5g1>**
    - RSVP by EOD April 12
    - Current registration count: 19 in-person; 0 dial-in
  - Hotel/Travel: Recommended hotels listed on [Wiki](#)
- 
- **4 November - 8 November, 2019** -- Location Chandler, Arizona (USA) @ hosted by Intel



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## Upcoming Events

Full list of LF events available at  
<https://events.linuxfoundation.org/upcoming-events/>

Additional LF Edge events available at  
<https://www.lfedge.org/events/>

# Upcoming Events

- [Hannover Messe, April 1-5, 2019](#) | Hannover, Germany
  - EdgeX will have a presence in the Dell booth, including the EdgeX Community Demo
- [Open Networking Summit, April 3-5, 2019](#) | San Jose, CA
  - LF Edge will have a booth
- [Internet of Things World, May 13-16, 2019](#) | Santa Clara, CA
  - EdgeX will have a booth





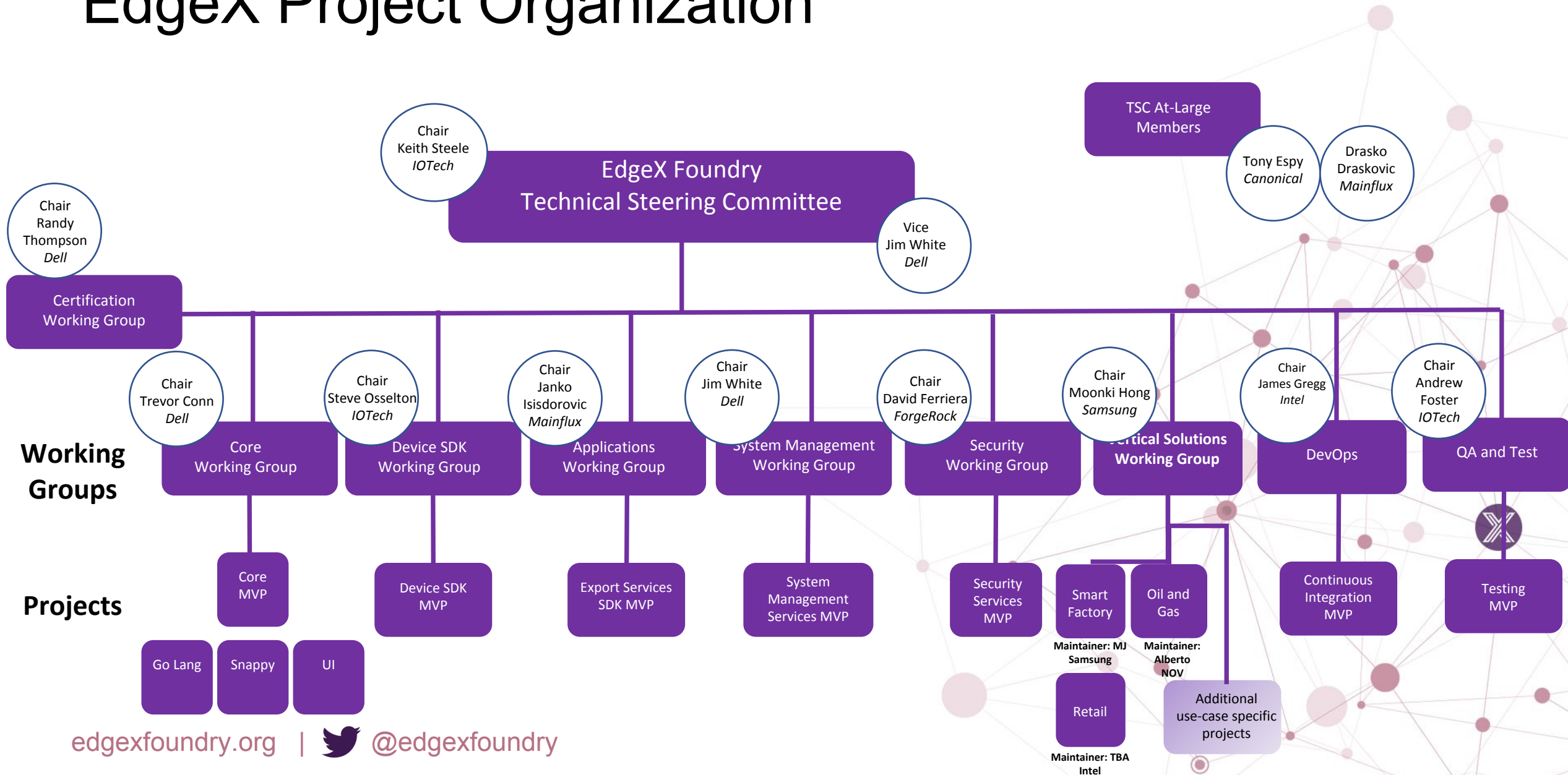
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AOB / Reminders

# AOB/Cadence

- Meeting Cadence Reminder
  - Currently held weekly at 7am PST on Wednesday's
  - Calls without TSC quorum will still be used to review issues
  
- **Next Meeting: March 6, 2019**

# EdgeX Project Organization



# Marketing

- **CTA:** If your company will be presenting EdgeX at an upcoming event/webinar/other, please email [pr@edgexfoundry.org](mailto:pr@edgexfoundry.org) so that we can help promote

# EdgeX in Market

- Page showcases momentum in the project, including solutions already available
- <https://www.edgexfoundry.org/edgex-in-market/>
- Email [info@edgexfoundry.org](mailto:info@edgexfoundry.org) if you have any additions

# Project Contributions Welcome!

- Our objective is to make EdgeX use & deployment pervasive!
- EdgeX success is 100% dependent on the vibrancy of a proactive community
- Getting Involved
  - Project membership growing - want to join contact Brett Preston at LF ([bpreston@linuxfoundation.org](mailto:bpreston@linuxfoundation.org))
  - First Priority is the MVP - potential contributors please contact [keith@iotechsys.com](mailto:keith@iotechsys.com) (people, equipment, technology)
  - If interested in adding new projects please contact the relevant working group chair

# Project Resources

Quick links to most commonly used Community Resources

- Code: <https://github.com/edgexfoundry>
- Documentation: <https://wiki.edgexfoundry.org/>
- Discussion: <https://chat.edgexfoundry.org/>
- Mail Lists: <https://lists.edgexfoundry.org/mailman/listinfo>
- Twitter: <https://twitter.com/EdgeXFoundry>
- LinkedIn: <https://www.linkedin.com/company/22298339/>
- YouTube: <https://www.youtube.com/c/EdgeXFoundry>

# EdgeX - Where to learn more

- EdgeX Foundry Wiki

<https://wiki.edgexfoundry.org/display/FA/EdgeX+Foundry+Project+Wiki>

- EdgeX Foundry Rocket Chat

<https://chat.edgexfoundry.org/home>

- [Weekly EXF Technical Spin up calls](#)

30 minute deep-dive topics followed by 30 minute open Q&A

Call recordings are available on the [Wiki](#)



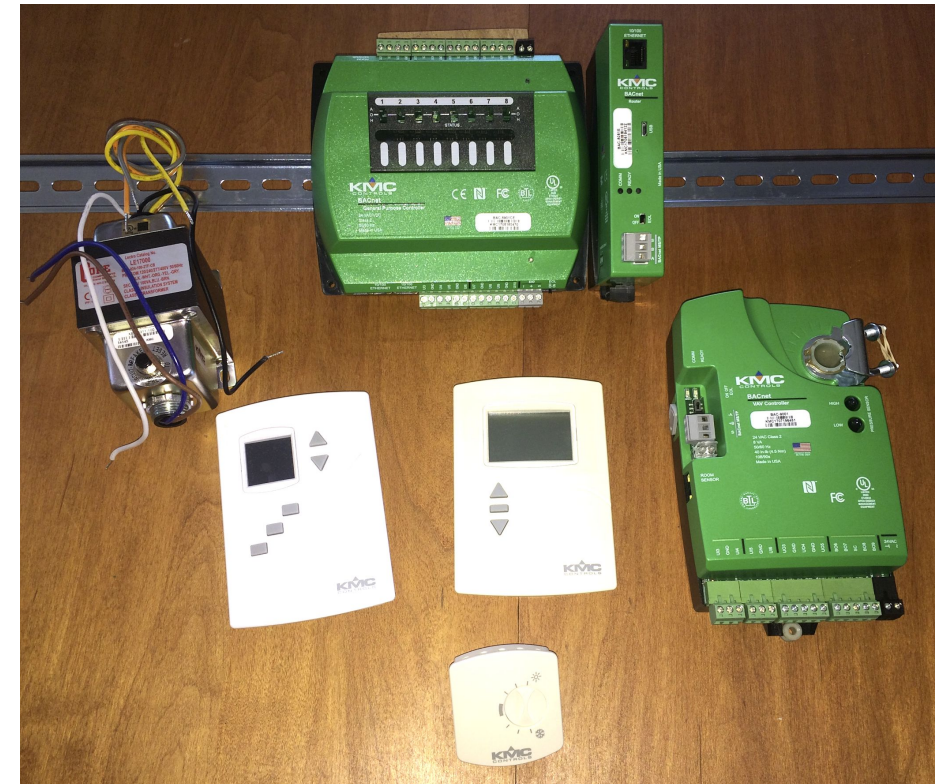
# What is the Device Exchange?

- A great way to put your products in the hands of other members so they can help build a better EdgeX!

• <https://wiki.edgexfoundry.org/display/FA/Device+Exchange>

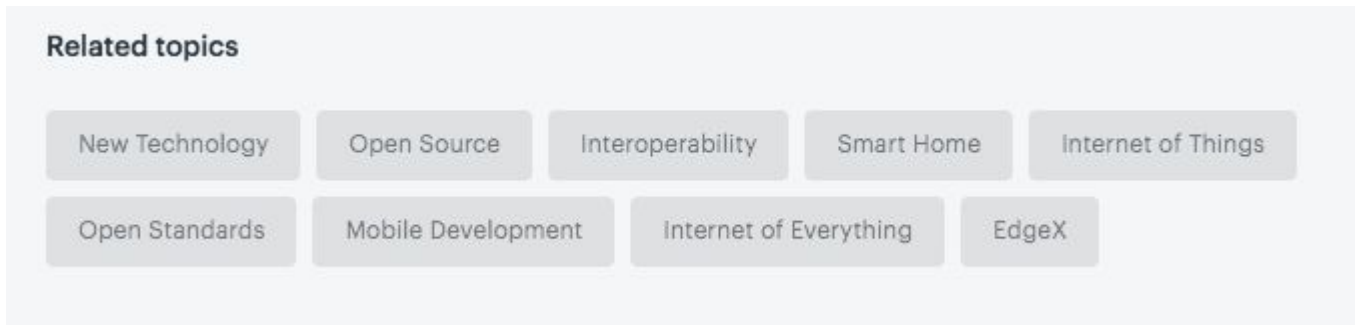


Special thanks to [Dave Bohlman](#) and [KMC Controls](#) for making this awesome kit and how-to guide available to members!!



# Meetups

- Help us grow awareness!
- Present, and Tag, EdgeX in your local IoT Meetups
- <https://www.meetup.com/topics/edgex/>
- Email [info@edgexfoundry.org](mailto:info@edgexfoundry.org) for assistance



## EdgeX ▼

Find out what's happening in EdgeX Meetup groups around the world and start meeting up with the ones near you.

Related topics:



# Meetups: Reimbursement Program

- <https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=7602724>
- Wiki page built for the community to leverage
- Encourage community to begin introducing EdgeX in your local Meetup groups
- EdgeX Foundry will fund/sponsor the talk in which EdgeX is scheduled to be presented
  - Up to \$250 for F&B, once per Meetup group, per quarter
- Let us help drive traffic to your event! Email [pr@edgexfoundry.org](mailto:pr@edgexfoundry.org) once Meetup has been scheduled
- Post-event, please consider doing a blog about the event

# Hackathons: How can you help?

- <https://wiki.edgexfoundry.org/display/FA/Hackathons>
- Provide any local volunteers onsite to help with technical work, potentially help judge, etc. (see list below of known hackathons coming up and locations)
- Sponsor breakfast/lunch/dinner for the participants (usually things like donuts/coffee, pizza lunch or cater sandwiches)
- Sponsor \$ rewards (incentives) for teams that successfully implement projects (these could even be projects that particular sponsors want to see accomplished - we just need them scoped appropriately so as to be something that can be accomplished in a 2 day period)
- Help provide or resource hackathon winner prizes
- Sponsor or provide any swag (t-shirts, mugs, etc.)
- Provide marketing assistance



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Thank You