# TSC Meeting

March 13, 2019

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# Meeting Logistics

Time: March 13, 2019 7am PDT – 8am PDT

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:

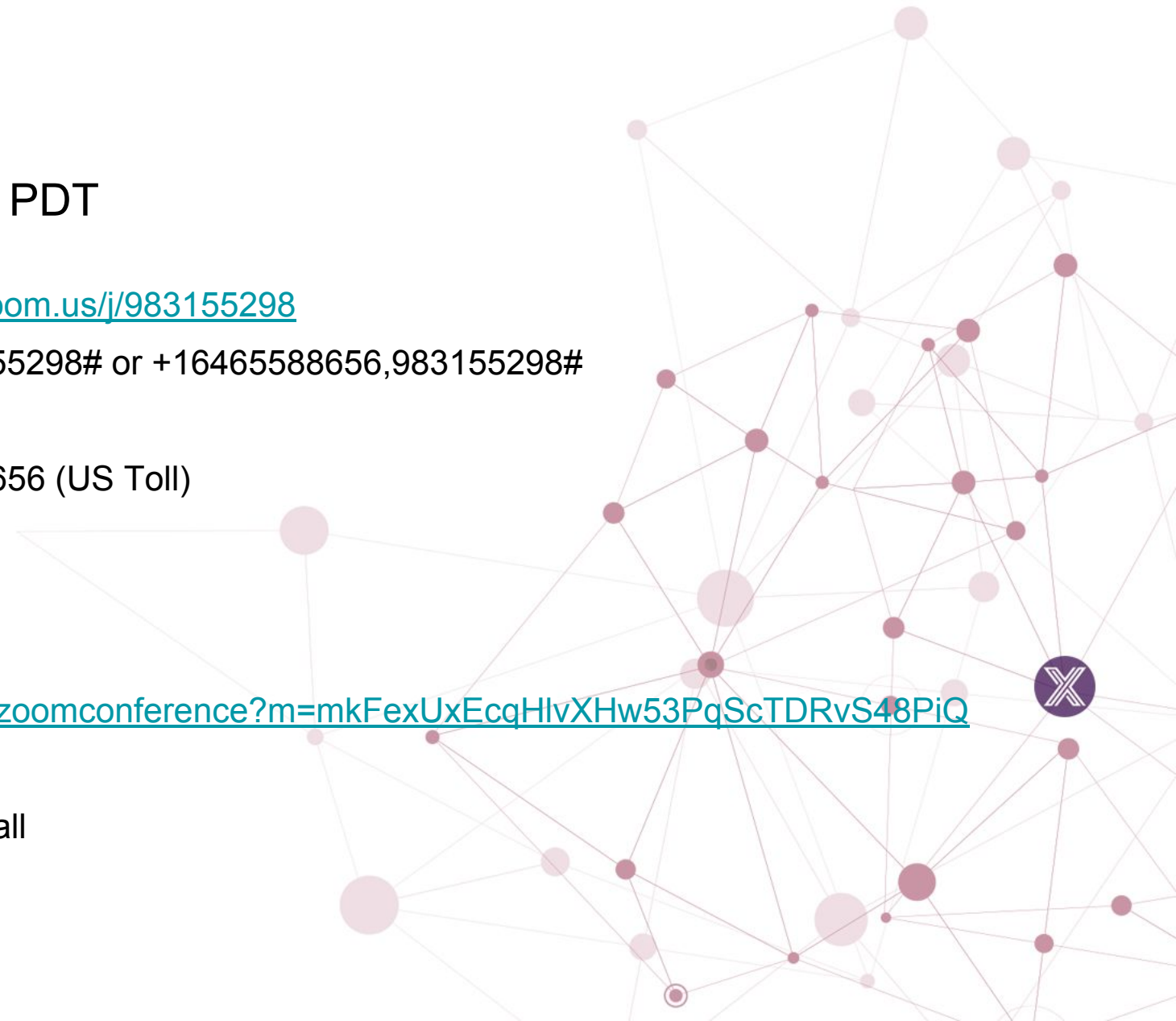Dial: +1 408 638 0968 (US Toll) or +1 646 558 8656 (US Toll)

+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/zoomconference?m=mkFexUxEcqHlvXHw53PqScTDRvS48PiQ

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

# TSC – Members Present Today

| Company | Name | Email |
|---------|------|-------|
| IOTech | Andy Foster | andy@iotechsys.com |
| ForgeRock | David Ferriera | david.ferriera@forgerock.com |
| Mainflux | Drasko Draskovic | drasko@mainflux.com |
| Intel | James Gregg | james.r.gregg@intel.com |
| Mainflux | Janko Isidorovic | janko@mainflux.com |
| Dell | Jim White (TSC Vice Chair) | james.white2@dell.com |
| IOTech | Keith Steele (TSC Chair) | keith@iotechsys.com |
| Samsung | Moonki Hong | moonki1.hong@samsung.com |
| Dell | Randy Thompson | Randy.T@dell.com |
| IOTech | Steve Osselton | steve@iotechsys.com |
| Canonical | Tony Espy | espy@canonical.com |
| Dell | Trevor Conn | Trevor.Conn@dell.com |

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
- Edinburgh release schedule revised
- Edinburgh deliverables
- EdgeX Mail List / Calendar Updates
- Next TSC F2F
- Upcoming Events
- AOB

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 - Jim
    - System Management - Jim
    - Certification - Randy
    - Vertical Solutions - Moonki
    - Developer Outreach - Michael

# Core Working Group (13-Mar-19)

- Removal of legacy metadata/scheduler
  - Almost finished
  - go-mod-core-contracts changes merged
  - Awaiting approval of PR #1155 in edgex-go
- Redis
  - Once the above PR is merged, then Trevor can get back to this task
- CBOR
  - Last week during Core WG we identified 5 broad tasks
    - These were assigned and sequenced
  - This week, agenda item Core WG to review last year's tech documents
    - Tobias @ Intel also has material to present
- Documentation
  - ReadMe in core-contracts and edgex-go updated
  - core-contracts Issue #31 to audit all code for GoDoc comments

# 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 (13-3-19)

- Go SDK
  - Review of various PRs
- C SDK
  - Confirmation of Edinburgh features
- Virtual device service demo next WG

# Known Connector Development

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

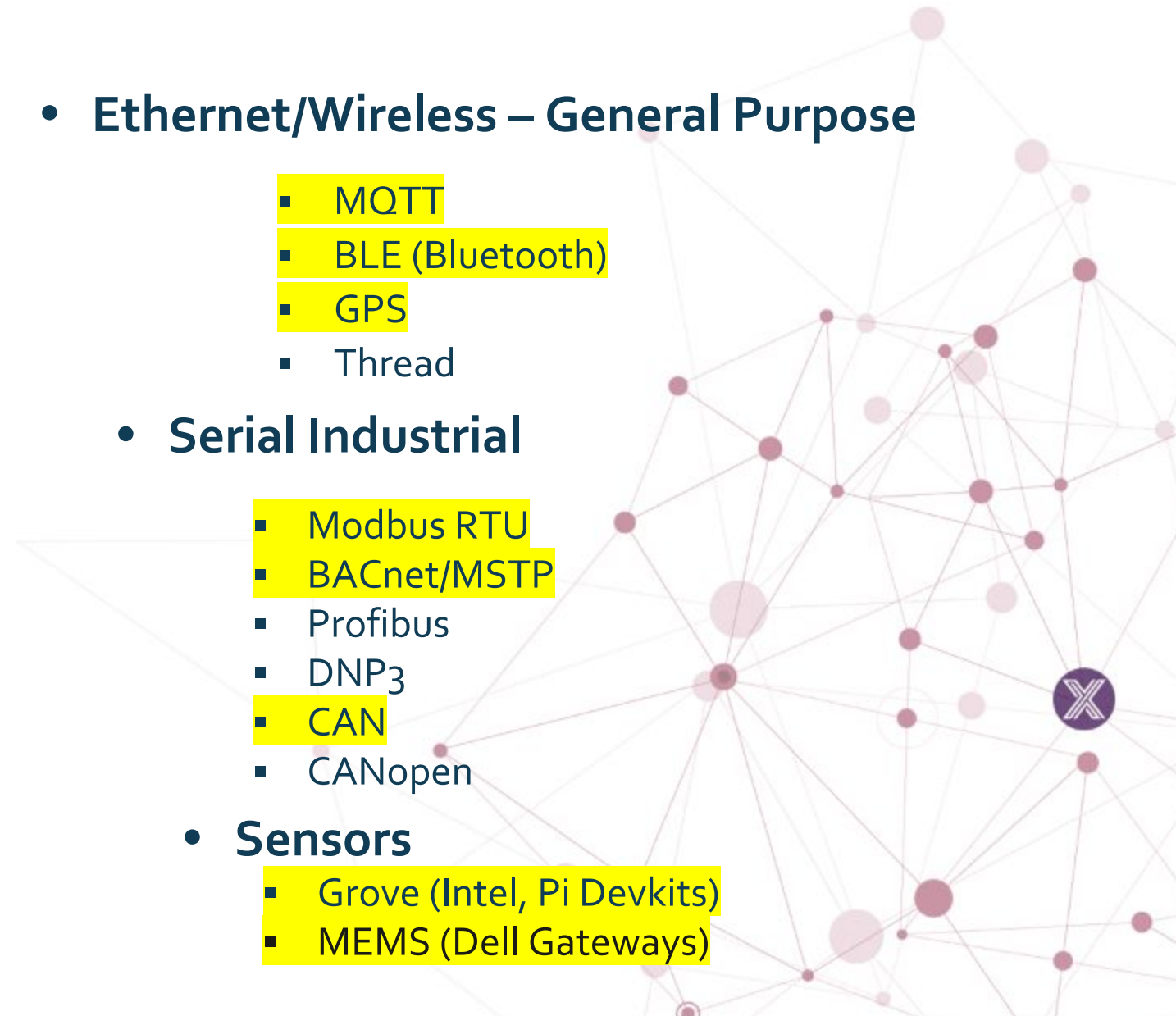- **Ethernet/Wireless – General Purpose**
  - MQTT
  - BLE (Bluetooth)
  - GPS
  - Thread

- **Serial Industrial**
  - Modbus RTU
  - BACnet/MSTP
  - Profibus
  - DNP3
  - CAN
  - CANopen

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

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# Test/QA WG Update (03-13-19)

- Continue to monitor and resolve black box test issues
- Completed work to dockerize JMeter docker image for automated performance tests
- Prepared the prototype of system integration framework using Cucumber JVM - will initially be used to support Device Service testing
  - Will also review [robot framework](#) proposed by Intel to compare with Cucumber - presentation by Intel at this week's QA/Test meeting


- Edinburgh objectives
  - Better visualization/dashboarding (Allure) of test results  (complete)
  - Automated capture of resource metrics to monitor performance - TIG stack will not be in place until mid April
  - Security test automation - implemented by Security WG, test failures need to be investigated (on track)
  - Code contributors will now be required to supply additional or updated blackbox tests (complete)

- Next QA/Test meeting Thursday 14th March, 4pm PST

# DevOps WG Update (03-06-19)

Several User Stories currently being worked in current sprint.

- Applications Functions SDK  - build automation completed - pending approval / merge.

- Demo last week Concourse CI semver approach for release versioning (i.e. tagging) go modules Thank you Jacob Blain Christen (Intel)
- Work in progress to demonstrate build automation using the approach.
- Risk: Landing of the EdgeX  TIG stack infrastructure still pending - LF dependency
- 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
- New Scope for Performance testing - build automation has not started
- New Device services will require build automation - Need the list so work can be scoped

Next DevOps WG meeting - Thursday 7AM PST

# Security WG Update (3-13-19)

Current work

- Securing service secrets with Vault
- CVE plan
- Kong upgrade (awaiting Hashicorp feedback on issue)
- Protecting the Vault Master

Postponed to Fuji

- HW secure storage
- service-to-service communications

# System Management WG Update (3-13-19)

- 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 (3-11-19)

- 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
- Link to doc, minutes, and recording available on wiki

# Vertical Solutions WG Update (3-12-19)

- [Confirmed] Commerce Project Bi-weekly call
  - Morning : March 27th, 4pm ~ 5pm in PST (GMT-08:00) (every 4 weeks)
    - https://zoom.us/j/975881686
  - Afternoon : April 9th, 8am ~ 9am in PST (GMT-08:00) (every 4 weeks)
    - https://zoom.us/j/132889142
- Any questions and feedbacks to :
  - EdgeX-TSC-Vertical-Solutions@lists.edgexfoundry.org

# Developer Outreach (03-13-19)

- Documentation not being published, Jenkins jobs failing

- Edinburgh documentation strike team

  - Device Service

    - Addressable changes

    - Device Profile changes

  - Core

    - Schedule/ScheduleEvent changes

  - Application Services

    - Message Bus architecture

    - Application Functions SDK

# Congratulations Michael

Michael Hall's tenure with EdgeX has been extended 3 more months, with support moving across LF Edge

We are looking forward to trying to get him permanent status under LF Edge

Thank you for all you do Michael

EDGEXFOUNDRY™

Edinburgh Release

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# Proposed timeline

- Freeze: ~~April 1~~ <span style="color:red">now May 28 (Tue after Memorial Day)</span>
  - Create new branch; update version numbers on master, etc.
  - Testing and bug fixes between 5/28 and 6/20 (23 days)
- Release date: ~~April 22~~ <span style="color:red">June 20 (Thursday)</span>
- EdgeX F2F: April 29 - May 2
  - Fuji planning
  - Will likely need some time at F2F to talk about Edinburgh release since its still going on
- Fuji will stay fall delivery dates - smaller release (as with Delhi)

# 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 (issues getting TIG in place for early April given LF delays)
  - Load/stress tests (stretch - issue getting it deployed)
- Kong upgrade (Hashicorp issue?)
- Redis implementation for all database using services
- Some device services may need to be brought up to Edin. and made available in public edgexfoundry org
- SIGUL code signing (help from LF needed)
- Updates to GUIs (IoTech & VMWare)

# Edinburgh Misses

- DS and DS SDKs
  - BACNet, BLE Device Service implementations using the Delhi SDKs.
  - Reading cache (in SDKs)
  - Dynamic discovery
  - Unit testing
    - capped to what we can without major refactoring

- 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

# Game Plan for Delivery - Strike team ownership of key deliverables

- CBOR/binary support - Toby on point with Trevor and Janko to assist with core, supporting and export services changes
  - Strike team to determine best WG to use to review design and work issues
- Redis implementations of DB services - Andre & Trevor
- Initial performance (and load) testing infrastructure and results - Andy
  - LF support for TIG stack
- Certification Program - Randy and Jim
- SDK Unit testing (to the point short of any major refactoring) - Steve
- SIGL Static Analysis - James (with LF support)
- Kong Upgrade - Tingyu

- Device services (Edinburgh public availability of Modbus, MQTT, BACNet, BLE, Virtual Device, SNMP) - Steve
  - Dell to provide SNMP DS
- Security storing service secrets in Vault and protecting the master token - Jim and Tingyu with Intel resource assistance
- Documentation clean up - Michael with WG leads to nominate areas of need first and complete doc updates by deadline
- UI updates
  - IoTech UI - Keith
  - VMWare UI - Jim to check with Huaqiao
  - UIs not able to be updated will be archived to the Delhi release

# Mail List / Calendar Updates

Brett Preston

# Changes coming to mail lists / calendaring

**Current status:** All meeting scheduling, calendar invites, mail list management is dependent on one person.

**Forward thinking:** WG Chairs will be enabled to execute all of the above via self-service tools; while still having full access to PM for support. Akraino successfully migrated to this model a few months back and they now have 20 hosts on-boarded (reference https://wiki.akraino.org/pages/viewpage.action?pageId=6128052).

**Google vs Outlook challenges no more:** The new calendaring model accurately sends out updates when meeting(s) are modified.

**Next Steps:**

1. Meeting invitees will be provided instructions on how to subscribe to a meeting series (options via either Groups.io or Confluence/Wiki dependent on preference). Reminders will be sent out over the coming weeks across multiple modes of communication, including Brett joining WG calls to help walk through the process. Gmail invites will be kept up for 1 month, giving plenty of time for folks to subscribe to the calendar invites, at which point they will be removed/sunset. Note: Dial-in information does not change during this process.
2. WG Chairs/Meeting Hosts will be provided Zoom log in and Groups.io Moderator status to allow them to both schedule new meetings and distribute invites to all on a particular mail list.
3. Those looking to jump right in can do so, with information already up at https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=21824127

EdgeX TSC F2F Meetings

# 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](https://goo.gl/forms/oMptkNU90RRxhK5g1)**
  - RSVP by EOD April 12
  - Current registration count: 22 in-person; 0 dial-in
- Hotel/Travel: Recommended hotels listed on [Wiki](#)
  - Rideshare sign-up: Brett will email those who have RSVP'd with link to sign up


- **4 November - 8 November, 2019** -- Location Chandler, Arizona (USA) @ hosted by Intel

Upcoming 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
    - Community demo running Delhi release
- Open Networking Summit, April 3-5, 2019 | San Jose, CA
  - LF Edge will have a booth
    - Need volunteers to help staff the booth: Sign-up sheet
    - Need project demo submissions - Submit demo title, summary, project/relevance and contact names to pr@lfedge.org
  - Presentation: Edge Computing League - LF Edge Umbrella (April 5 at 11:30)
- Internet of Things World, May 13-16, 2019 | Santa Clara, CA
  - LF Edge will have a booth
    - Submit related project demos to showcase in the booth to pr@lfedge.org

Discussions around upcoming events occur in the LF Edge Outreach Committee.
Members may subscribe at: https://lists.lfedge.org/g/outreach-committee

# Additional Events & Speaking Opps

- IoT Tech Expo Europe, June 19-20, 2019 | RAI, Amsterdam
  - Speaking Opportunity - Enterprise IoT Solutions Track - Janko Isidorovic/Drasko Draskovic, Mainflux (confirmed)
- Open Source Summit China, June 24-26, 2019 | Shanghai
  - Arpit giving a keynote on LF Edge
- IoT Solutions World Congress, October 29-31, 2019 | Barcelona
  - Call for Testbeds is Open
    - January 7 - April 30: Submission
    - May 1 - June 20: Review
    - June 20 - June 30: Notification
    - July 5: Publication

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Members may subscribe at: https://lists.lfedge.org/g/outreach-committee
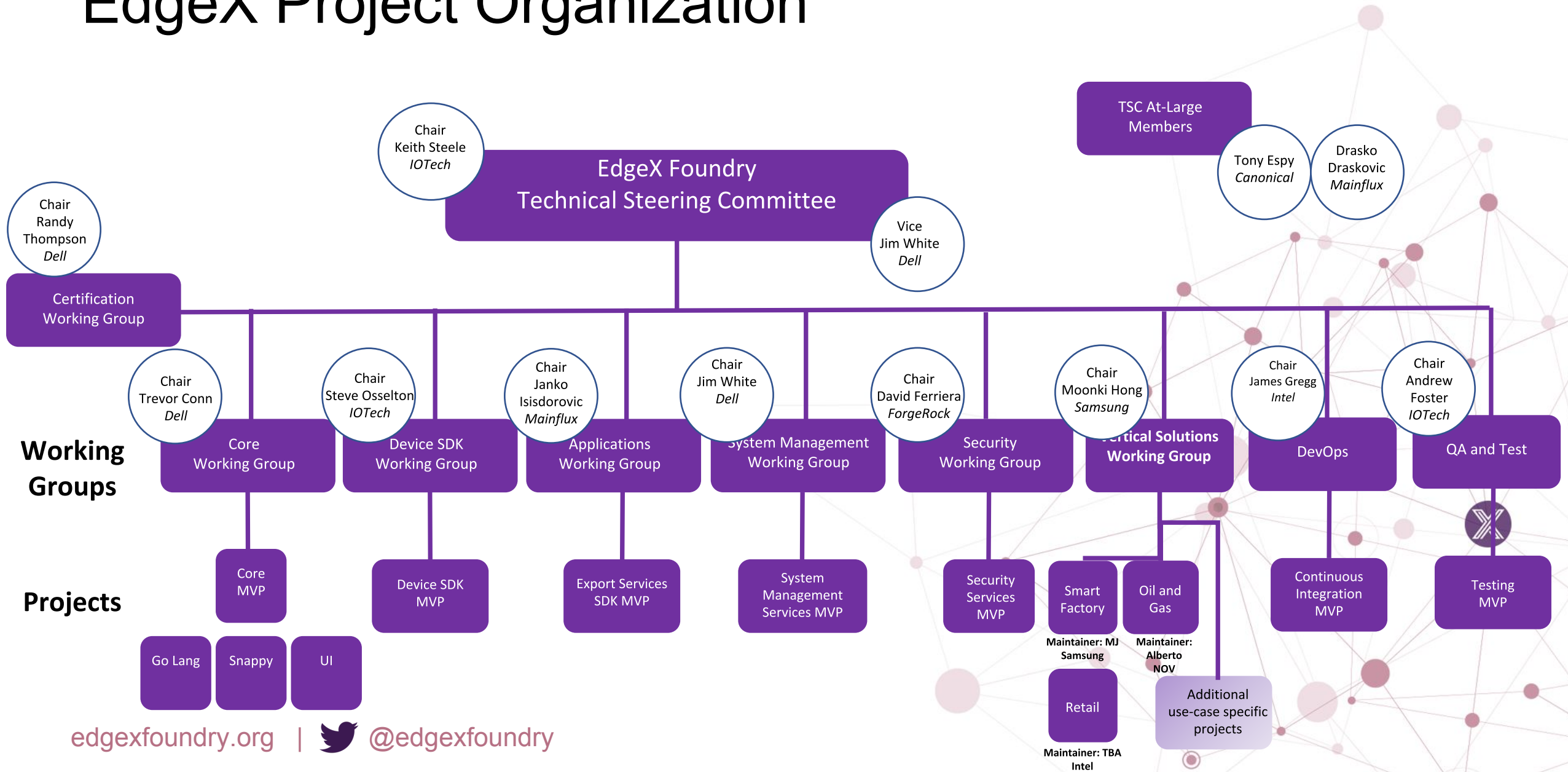
AOB / Reminders

# AOB/Cadence

- Meeting Cadence Reminder
  - Currently held weekly at 7am PDT on Wednesday's
  - Calls without TSC quorum will still be used to review issues

- **Next Meeting: March 20, 2019**

# EdgeX Project Organization



**EDGE X FOUNDRY™**

Chair
Keith Steele
*IOTech*

EdgeX Foundry
Technical Steering Committee

Vice
Jim White
*Dell*

TSC At-Large
Members

Tony Espy
*Canonical*

Drasko
Draskovic
*Mainflux*

Chair
Randy
Thompson
*Dell*

Certification
Working Group

**Working Groups**

Chair
Trevor Conn
*Dell*

Chair
Steve Osselton
*IOTech*

Chair
Janko
Isisdorovic
*Mainflux*

Chair
Jim White
*Dell*

Chair
David Ferriera
*ForgeRock*

Chair
Moonki Hong
*Samsung*

Chair
James Gregg
*Intel*

Chair
Andrew
Foster
*IOTech*

Core
Working Group

Device SDK
Working Group

Applications
Working Group

System Management
Working Group

Security
Working Group

Vertical Solutions
Working Group

DevOps

QA and Test

**Projects**

Core
MVP

Device SDK
MVP

Export Services
SDK MVP

System
Management
Services MVP

Security
Services
MVP

Smart
Factory

Oil and
Gas

Continuous
Integration
MVP

Testing
MVP

Go Lang | Snappy | UI

Maintainer: MJ
Samsung

Maintainer:
Alberto
NOV

Retail

Additional
use-case specific
projects

Maintainer: TBA
Intel

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# Marketing

- **CTA:** If your company will be presenting EdgeX at an upcoming event/webinar/other, please email pr@lfedge.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 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 Mike Woster at LF (mwoster@linuxfoundation.org)
  - First Priority is the MVP - potential contributors please contact 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://slack.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 Slack

  https://slack.edgexfoundry.org/

- Weekly EXF Technical Spin up calls

  30 minute deep-dive topics followed by 30 minute open Q&A
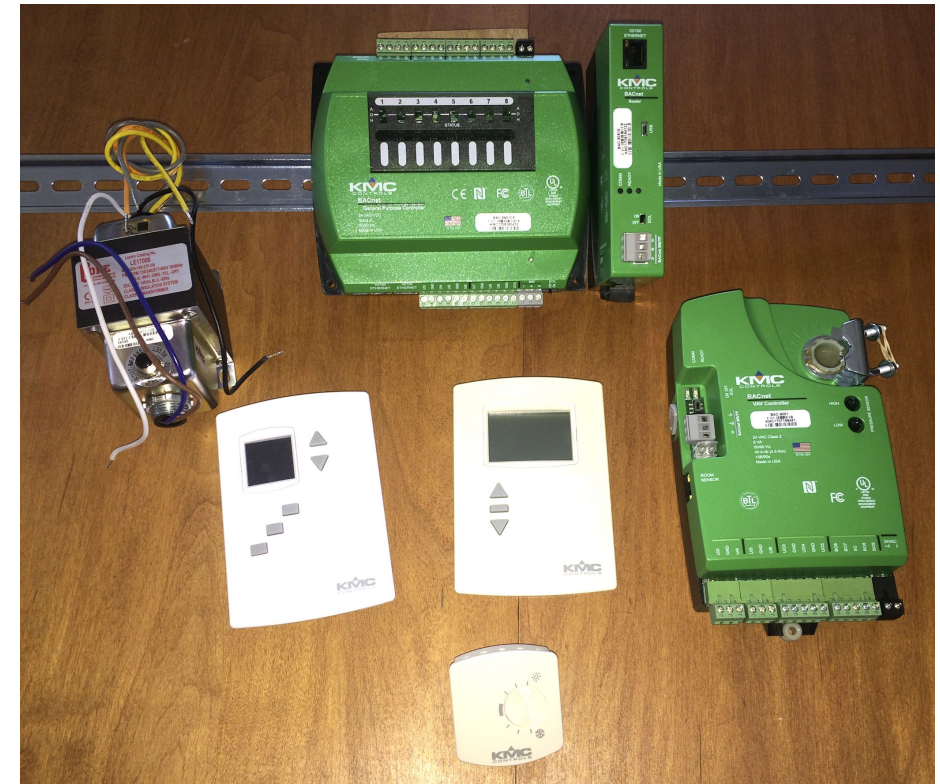
  Call recordings are available on the Wiki

# 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 for assistance

# 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@lfedge.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](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

Thank You