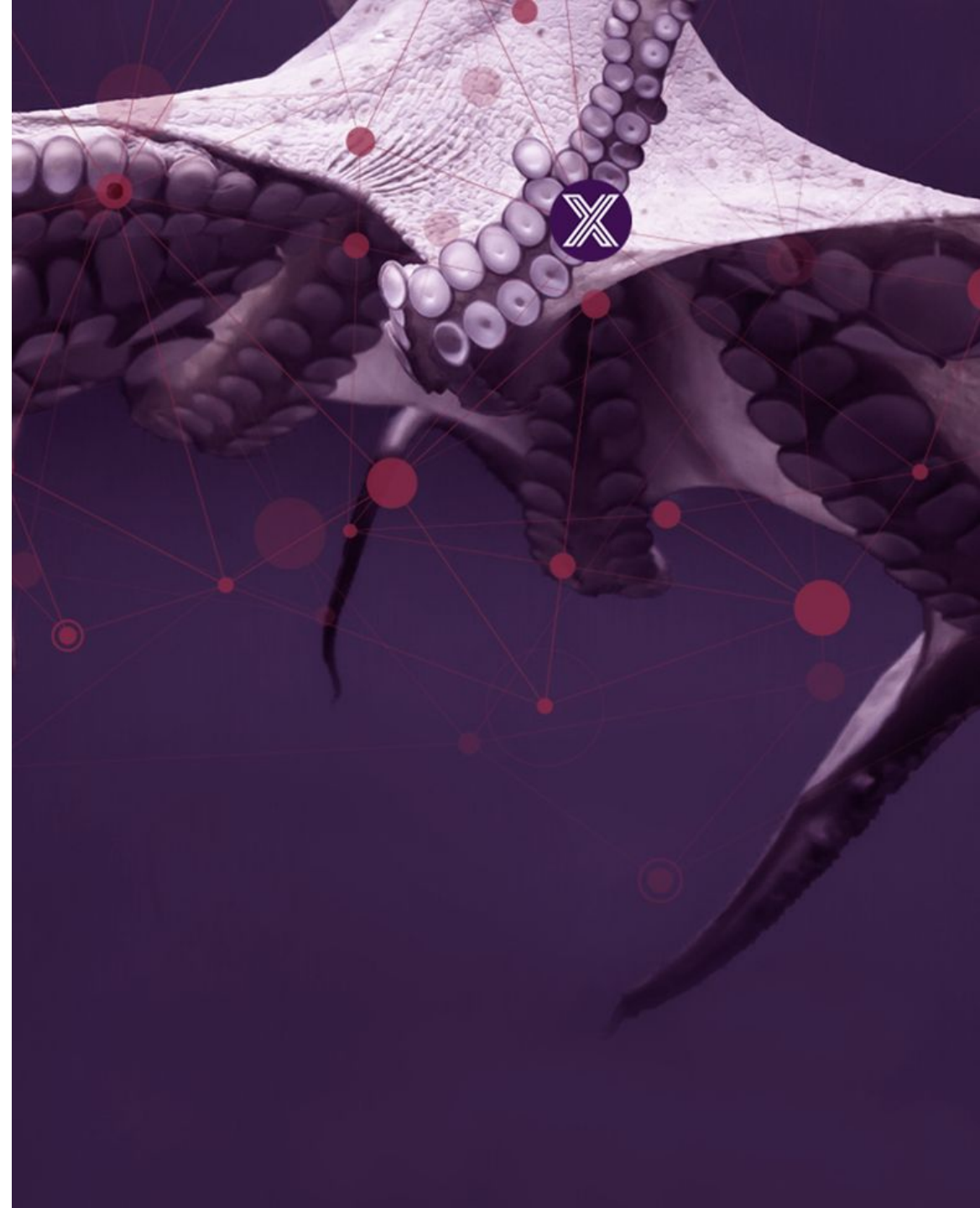# EDGEXFOUNDRY™

TSC Meeting

September 1, 2021

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Meeting Logistics

Time: Wednesdays 8am PDT – 9am 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:

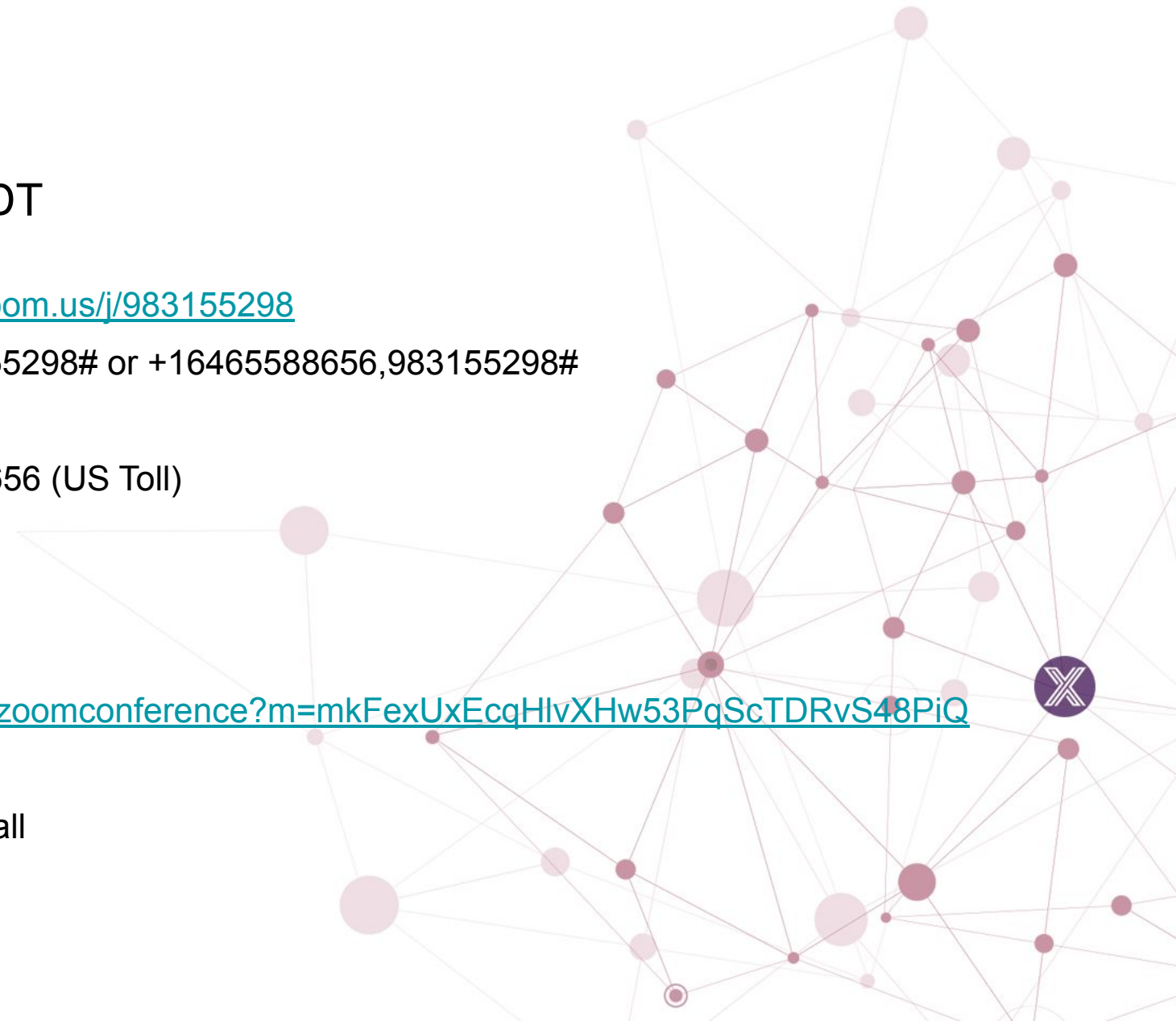Dial: +1 408 638 0968 (US Toll) or +1 646 558 8656 (US Toll)

+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	Position
IOTech	Iain Anderson	iain@iotechsys.com	Device Services WG Chair
Intel	Ernesto Ojeda	ernesto.ojeda@intel.com	Dev Ops WG Chair
IOTech	Jim White	jim@iotechsys.com	Outreach WG Chair
Intel	Bryon Nevis	bryon.nevis@intel.com	Security WG Chair
Intel	Lenny Goodell	leonard.goodell@intel.com	Applications & Analytics WG Chair
IOTech	James Butcher	james@iotechsys.com	Core/Test/QA WG Chair

Gavin Lu (VMWare), Tony Espy (Canonical), Melvin Sun (Intel)

Current quorum = 7 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
- Ireland Documentation
- Proposed EdgeX Challenge (a early, virtual 2022 hackathon for English speakers)

Work Group Updates

Chairs

Working Group Chair Updates

- Around the horn
  - Product Manager - Lenny Goodell
  - Applications - Lenny Goodell
  - Core - James Butcher
  - Device Services - Iain Anderson
  - DevOps - Ernesto Ojeda
  - Release Czar - Bill Mahoney
  - Security - Bryon Nevis
  - PRC Updates
  - Outreach - Jim White
    - Certification - Rodney Hess
    - Marketing - Camilo Dennis
    - Vertical Solutions (and LF Edge TAC) - Henry Lau

Product Manager (8/4) - Jakarta

In Progress (5, +1)

- **Securing Consul with Access Token**
    - C Device SDK - **TBD**
    - C Device Services - **TBD**

- **Secure Message Bus connection**
    - C Device SDK - **TBD**
    - C Device Services - **TBD**

- **Secret Provider for All**
    - DS SDK C - DONE
    - C Device Services - **TBD**

- **PR templates require Docs PR link**
    - Device SDK - **DONE**
    - App SDK - **DONE**
    - ASC - **DONE**
    - Remaining - **TBD**
    -

- **Metrics ADR - WIP**

Done (1, +1)

- **Quotes in TOML files inconsistent**

Backlog (2)

- Implement Generate/Inject passwords into Vault
- **Support complex object types in Reading**

Icebox (0)

Related Docs PR now required (if applicable)

Related Docs PR: edgexfoundry/edgex-docs#551

Applications WG Update (24-August-2021)

Completed
- rfid-llrp-inventory-service 1.0.0 has been released

WIP
- Pipeline per Topic (PRs open)
    - https://github.com/edgexfoundry/edgex-docs/pull/551 (Draft for Jakarta)
    - https://github.com/edgexfoundry/app-functions-sdk-go/pull/938
    - https://github.com/edgexfoundry/app-service-configurable/pull/313 (Draft pending on #938)

eKuiper
    - Edgex Sink to publish back to Edge MessageBus (only non-secure mode)
    - Planned enhancement to sync Source and Sink to use same client if configured the same (will fix Sink for secure mode)
    - 1.3.1 release next week
        - https://github.com/lf-edge/ekuiper/issues?q=is%3Aopen+is%3Aissue+milestone%3A1.3.1

C/C++ Application Service SDK proposal
    - Presented by Tom Brennan (Eaton)
    - Not a general purpose SDk like in Go
    - Create digital twin for all the devices on the north side for a single protocol such as ModBus

Next
- Wrap up Pipeline per Topic PRs
- Disposition Bug #500
- **Next week's meeting is canceled**

Next meeting **September 7, 2021** @ 9am Pacific

Application Services - Ireland

Functions (built into SDK)

- Add Tags
- Batch
- Compression (GZIP & ZLIB)
- Conversion (XML & JSON)
- PushToCore
- ~~MarkAsPushed~~
- Encryption (AES)
- Export
  - MQTT
  - HTTP POST & PUT
- Filtering
  - By Profile Name
  - By Device Name
  - By Source Name
  - By Resource Name
- JSONLogic
- Set Response Data

Features

- Store and Forward
- Batch and Send
- Web Server
- Configurable App Service
- Vault Integration for Secrets
- MQTT Event triggers
- Filter by Topics
- Custom Triggers
- Publish Topics and URL Placeholders
- Structure Custom Configuration
- Background Publishing

- Received Topic
- Context Storage
- Clients
  - Logging, Event
  - Command
  - ~~Device, DeviceService~~
  - DeviceProfile
  - Notification
  - Subscription
  - Registry

Reference/Example App Services
(built on top of SDK)

- Simple Filter
- Simple Filter and MQTT Export
- Simple Filter and HTTP Export
- Simple CBOR
- Azure IoT Hub
- Amazon IoT Core
- Cloud Event Transformation
- Secret Retrieval
- JsonLogic

- Send Command
- Convert & Publish
- Custom Target Type
- IBM Watson IoT (ASC Profile)
- Custom Trigger
- Influx DB Export
- Fledge Export

Core WG Snapshot (01 Sep 2021)

- Ireland / 2.0.1
  - Documentation nearing completion
  - [Performance results](#) and [performance report](#) now complete
- Jakarta:
  - TAF: All passing. 541 Functional, 32 Integration, 10 Performance
  - Complex Object Types Discussion [#3679](#) - **TSC Approval Needed**
  - EdgeX CLI ADR [#525](#) reviewed

Core Project Board Status

- 2 New Issues (+0)
- 12 Release Backlog (+0)
- 1 Bug Backlog (+1)
- 1 In Progress/QA (+0)
- 37 Done (+3)
- 4 Jakarta Stretch (+0)
- 7 Icebox (-1)

QA/Test Project Board Status

- 0 New Issues (+0)
- 3 Release Backlog (+0)
- 1 In Progress/QA (-1)
- 10 Done (+2)
- 1 Icebox (+0)

Next meeting Thursday September 02, 2021 @ 8am Pacific Time

Device Services WG Update (25-Aug-21)

- RFID-LLRP device service released (for Hanoi)
- MQTT DS enhancements in scope
  - multi-level topics (alternative ingestion format)
  - ability to send multi-reading Event

Next meeting: September 13th

Device Services - current/coming (as of v2.0)

Open Source connectors (Current):

- Modbus (TCP/RTU) in Go
- Virtual Device in Go
- SNMP in Go
- MQTT in Go
- BACnet (IP & MSTP) in C
- ONVIF Cameras in Go
- REST in Go
- Grove in C
- CoAP in C
- GPIO in Go

Open Source connectors (Future):

- LLRP / RFID in Go
- UART in Go

Commercial connectors (Current):

- BLE in C
- Zigbee in C
- GPS in C
- CAN in C
- CANOpen in C
- MEMS in C
- EtherCat in C
- EtherNet/IP in C
- Profinet in C
- OPC-UA Pub/Sub in C
- Siemens S7 in C
- File reader in C

There are additional commercial MQTT (Go), Modbus (C), REST (Go), ONVIF (C) and BACnet (in C) that have added features over the community editions

DevOps WG Update (09-01-2021)

Pipeline Related

- [Backlog] Alpine 3.12 Security Support Ends May 1, 2022, suggest moving to Alpine 3.14 May 1, 2023
  - https://endoflife.date/alpine
  - `golang:1.16-alpine3.14` is available
  - Who will own this?
- [Backlog] LTS artifact rebuild planning.
  - Potential pipeline/release changes required to accommodate rebuilding of artifacts.

Other

- [In Progress] Spike Developer Badge Program
- [Hold] Master --> Main branch rename.
  - **[Hold] /edgexfoundry** All done except edgex-docs

Next DevOps WG Meeting Thursday, September 9, 2021 @ 9AM PDT

edgexfoundry.org | @edgexfoundry

Release Czar (09-01-2021)

Current Release Activity:

- None this week

Prior Release Activity:

- (Complete)(August 20) - app-rfid-llrp-inventory (1.0.0)
- (Complete)(August 20) - device-rfid-llrp-go (1.0.0)
- (Complete)(August 4) - app-functions-sdk (2.0.1)
- (Complete)(August 4) - app-service-configurable (2.0.1)
- (Complete)(August 4) - device-coap-c (2.0.1)

Security WG Update (August 25)

Next Meeting: Today & September 8

Security Project Board Status

- 0 New Issues (-1)
- 12 Release Backlog (+0)
- 1 In Progress/QA (+0)
- 2 In review (+0)
- 9 Done (+1)

Updates on EdgeX in Chinese speaking regions

Upcoming events with EdgeX in September

- Sep 16th: Edge Cloud open source software summit by 5G MEC associations in Shanghai (face-to-face)
- Sep 24th: EdgeX workshop by Advantech in Taiwan (virtual)
- Sep 25-26th: F2F competition of EdgeX challenge 2021

  (Shanghai, Beijing, Shenzhen) (face-to-face)

- Sep 27th: ACE (AI, Cloud, Edge) summit & EdgeX Q3 meetup co-hosted by VMware & Intel in Beijing (virtual)

Outreach WG (9/1/21)

Certification

- Research ongoing

Vertical Solutions

- Open Retail Reference Architecture sub-project
  - Architect document published
- Advantech Sept 14, 8am PDT - registration link now available on web site

Hackathon

- next slide - update and TSC approval requested

LTS

- Tiger having final meeting in a week - finalizing the docs.
- Present to Outreach and then TSC in coming weeks

Working on Events for 2022 & Blog/Vlog topics for fall

ADR review (in order of priority)

ADR name and PR number	Status	owner	Work Group
Metrics / #268	Needs review	Jim White	Core
ADR on dynamic service list / #377	Needs review	Jim White	Core
ADR on unit of measure / #386	Needs review	Jim White	Core
ADR on V2 CLI/Client / #525	Needs review	Siggi Skulason	Core

* - indicates some work this week

Miscellaneous topics and announcements

- Issue and PR policy
    - Will we require an issue for all bugs **_and_** features? Or just bugs?
    - email sent to community for input
    - Discussion??

Jim to send email today for TSC vote. Due to vacations - we'll accept votes through next Wednesday morning.

- EdgeX Challenge (presentation in a second)
    - Seeking input and approval of the TSC

Ireland Documentation remaining to-dos

✓ Intro

Getting Started

    ✓ Quick start

    ✓ Getting Started with Docker

    ✓ Getting Started with Snap

✓ Getting Started Developers

    ✓ Getting Started Go Developers

    ✓ Getting Started C Developers

    ✓ Working in a Hybrid Environment

    ✓ App Functions SDK

    ✓ Device Services SDK

    ✓ C SDK

    ✓ Go SDK

Tools; CLI

✓ Security (multiple pages)

Microservices

    ✓ Cross Cutting

    ✓ Configuration & Registry

    ✓ Core Services

    ✓ Supporting Services

    ✓ System Management

    ✓ Device Services

    ✓ App Services

Examples and Tutorials (most have been updated)

    ~~EdgeX on RaspPi4~~

    Add a device SNMP

    Walkthrough

    ~~EdgeX Hands on Tutorial~~

✓ Reference

EdgeX Challenge 2022

Incubating tomorrow's edge solutions

Plan for English, Virtual Developer "Fest" in early 2022

Primary Goals of the fest

- Attract new EdgeX contributors and their organization (especially those in the English speaking world - US, Europe, NZ/AUS, etc.).
  - Success factors
    - The fest should result in interest from at least one new company looking to join LF Edge and contribute to EdgeX.
    - The fest should result in at least 10K hits/views on relevant social media.
    - The fest should see 6-12 teams and about 20-60 developers participating (6-12 teams of 3-5 people each)

- Produce demonstrable EdgeX solutions against real world use cases
  - Success factors
    - Get at least 1/2 (3-6) of the projects approved by our TSC for addition to our edgex-examples - we should track the number of forks over time
    - Have at least 1/2 of the resulting projects featured in video blogs that we can feature on Youtube, our wiki/website etc. - we should track the number of viewers over time
    - The fest should result in at least 10K hits/views on relevant social media/video downloads/etc.
    - See at least one 3rd party announcement (from a competitor or event participant) of a new EdgeX based project or service that came from their participation in the event

- Highlight a new vertical space for EdgeX (one not previously seen or demonstrated)
  - Success factors
    - Collect at least a handful of new requirements for EdgeX to consider for incorporation in the base product as a result of the fest needs/requirements
    - The fest should result in at least one new organization requesting information about how they can participate in future requirements definition in the space
    - The fest should result in at least 10K hits/views on relevant social media
    - See at least one 3rd party announcement (from a competitor or event participant) of a new EdgeX based project or service that came from their participation in the event

Secondary Goals of the fest

- Secondary goals are dependent on contestant interests/projects
- To integrate EdgeX into new technology
  - Time series database, AI/ML system, new sensor, new cloud system or digital twin, etc.
- To help a competing organization get recognized
  - Potentially attracting sponsorship or even investment in their idea
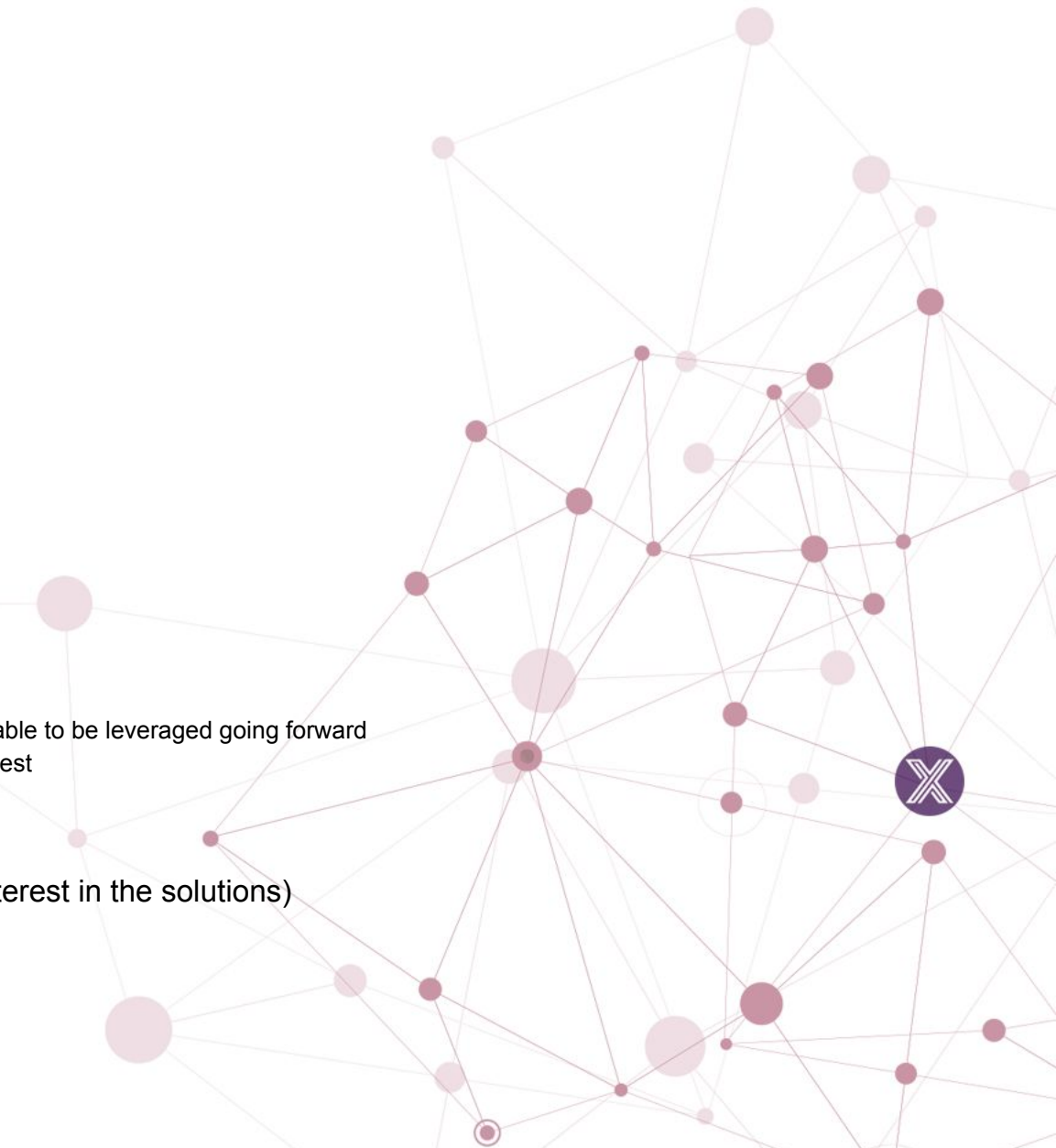
Vertical/Use Case

- Some debate about the focus area for the fest
  - Agreement that retail has already been an area of focus before and excluded from this event
  - We'd like to find a new and untapped vertical space to attract new developers and organizations
  - We'd like to find an area that allows participation from partner project(s)
    - Like AgStack, LF Energy, etc.

- We need the "vertical" focus area and *potentially* a specific use case
  - Examples
    - Retail vertical – loss prevention / theft detection use cases
    - Farming vertical – soil nutrient measuring / weed detection & machine spraying use cases

- Vertical focus and specific use case must highlight EdgeX strengths…
  - Typically involve the use of multiple sensors using multiple protocols
  - Incorporate edge analytics/rules engine/local intelligence
  - Make a decision at the edge and actuate something at the edge

Picking the vertical and use case

- Requesting help from our extended community

- Vertical Options
    - Smart Buildings / Building Automation
    - Smart Ag / Food Tech
    - Smart Energy / Utilities
    - Smart Manufacturing

- Surveying the field – your input and vote matters
    - https://bit.ly/EdgeXChallenge2022
    - https://www.surveymonkey.com/r/RNV72FK
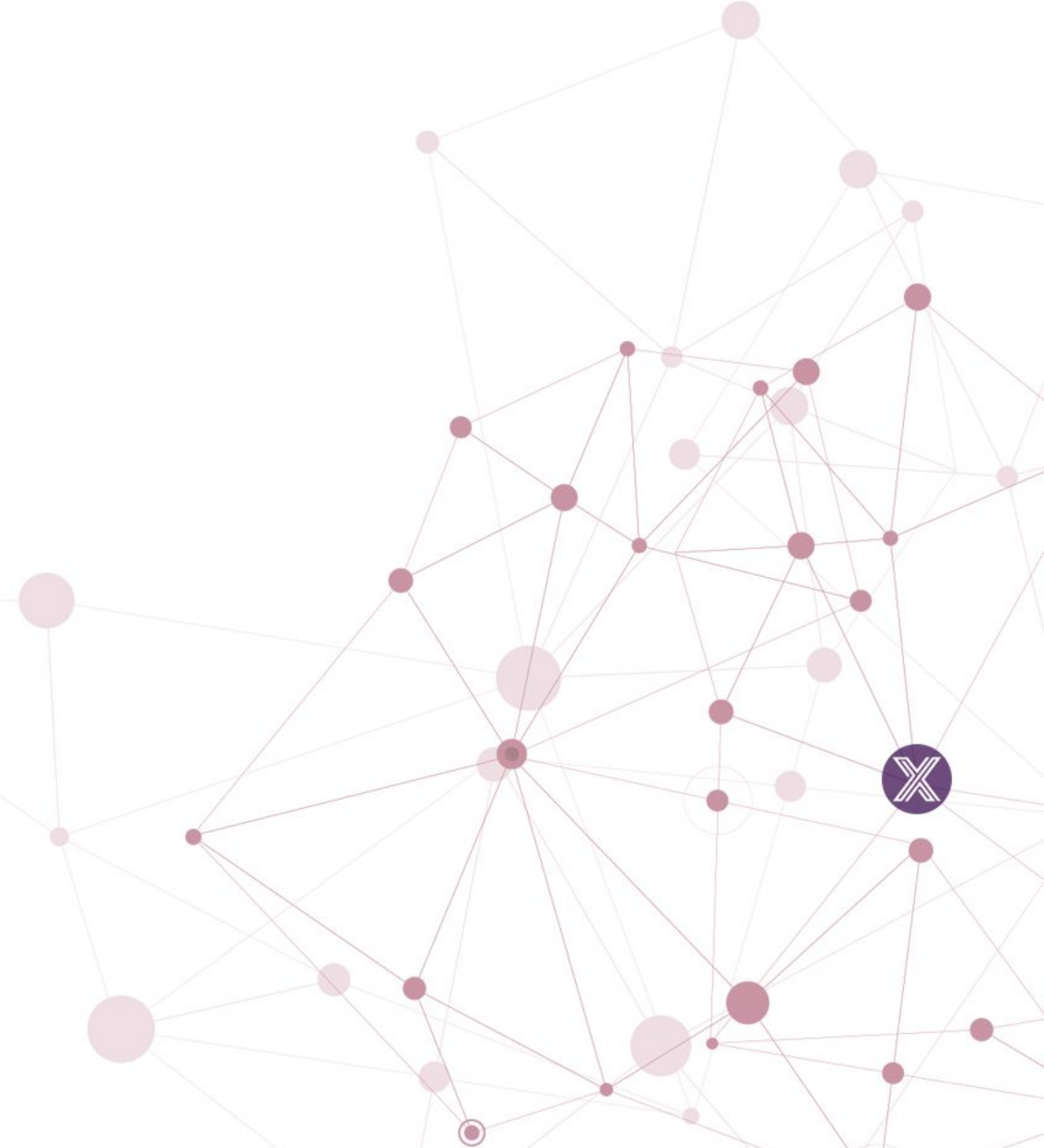
Implementation

- Name: EdgeX Challenge in X, where X is the vertical space selected

- When: kick off in January 2022 (February at the latest)

- How: completely virtual event

- Hold the competition over 5 weeks
    - Week 1 – training
    - Mid-way (week 2-3) check point presentations
        - Design reviews with the judges for input/feedback
    - Week 5 – presentations/judging

- Judges from sponsor and member companies
    - Guidelines/criteria to be provided by the community – still to be finalized
    - Higher scores for
        - Incorporating more EdgeX elements and highlight the strengths/reason for EdgeX
        - Easy to extend and/or productize – ensuring that the solutions are well thought out and able to be leveraged going forward
        - Best described/documented solution – making it easy for us to leverage outside the contest

- Partners
    - Potentially additional open source project (AgStack, LF Energy, etc.)
    - Seek sponsors from companies specializing in the vertical (potentially with interest in the solutions)

- Prizes – TBD
    - Based on what members and sponsors are willing to provide
    - Checking with LF on limitations

Next Steps

(done) - Approval of the Outreach WG on the plan

- <mark>Selection of the vertical/use case</mark>

- <mark>Approval of the TSC</mark>

- Sept-Oct
  - Form an EdgeX team to run the event
  - Line up sponsors
  - Get commitments of partner projects
  - Develop the marketing material to advertise the event
  - Develop the contest materials
    - Rules on contestants, scope of the solutions, ownership of materials, etc.
    - Judging criteria
  - Develop the training materials (carries through Dec)
  - Pre-registration advertise ("coming-soon") to get teams thinking about entry

- Nov-Dec
  - Advertise and recruit contestants
  - Line up judges

- Jan
  - Kick off event
  - Training

Thank You