LF Edge TAC
Technical Advisory Council

18 November 2020

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Meeting Details

› November 18, 2020 (@ 7:00am PST)
› Meeting Info:
  › Meeting URL and Subscription can be found at https://lists.lfedge.org/g/TAC/calendar

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Project/Member	Representative	Named Alternate	Project/Member	Representative	Named Alternate
Altran	Shamik Mishra	Nilanjan Samajdar	**GE Research**	Joel Markham	James Ward
Arm	Reed Hinkel	Tina Tsou	**HP Inc.**	Henry Lau	
AT&T	Kandan Kathirvel		**Huawei**	JianGuo Zeng	Gabriel Yuyang
Baidu	Leding Li		**IBM**	Joseph Pearson	Ryan Anderson
Charter	Jeffrey Saelens	Mohammad Zebetian	**Intel**	Jim St. Leger (TAC Chair)	Sharad Mishra
Dell	David Lake	Trevor Conn	**Inwinstack**	Thor Chin	
Dianomic	Bill Hunt	Tom Arthur	**MobiledgeX**	Vikram Siwach	
Equinix	Justin Dustzadeh		**Nokia**	Tapio Tallgren	
Ericsson	Torbjörn Keisu	Andrew Wilkinson	**NTT**	Takeshi Kuwahara	
Fujitsu	Toshimichi Fukuda	Hatsumi Iino	**OSIsoft**	Daniel Lazaro	
Futurewei	Chaker Al-Hakim	Jane Shen	**Radisys**	Adnan Saleem	Prakash Siva

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Project/ Member	Representative	Named Alternate	Project/ Member	Representative	Named Alternate
Red Hat	Anil Vishnoi	Thomas Nadeau	**Akraino**	Tina Tsou	Oleg Berzin
Samsung	MyeongGi Jeong	Chi-Hyun Cho	**EdgeX Foundry**	Henry Lau	
Seagate	Matt Shumway				
Tencent	Yachen Wang	Wei Chen			
Western Digital	Jorge Campello De Souza				
Wipro	Subhas Mondal				
ZEDEDA	Erik Nordmark	Roman Shaposhnik			

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Topics

1. APAC Update [20 minutes]
   a. Gitee introduction
   b. EdgeX Challenge Recap
2. Board Meeting Recap / 2021 Planning [20 minutes]
3. Upcoming Events / Next Meeting [10 minutes]

APAC Update
Melvin Sun, Intel
Yang Hin, LF APAC

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Gitee Introduction
Melvin Sun, Intel
Yang Hin, LF APAC

Gitee is more than a development platform

Build for you and your team to plan projects,
host and review code more efficiently

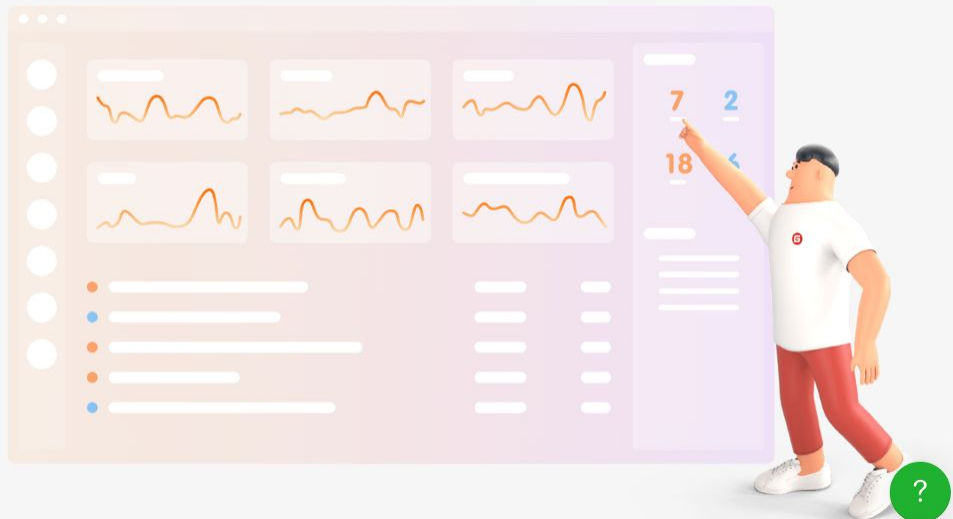**Sign up**   **Gitee Enterprise**

Developers	Repositories	Businesses	Colleges
5 M+	**10** M+	**150** K+	**2000** +

•Gitee platform was launched by Open Source China (OSChina.net) in 2013.

•Gitee provides hosting for software development and developercollaboration using Git.

•More than 5 million developers and users. It has become the largest Git platform in China.

•Hosting over 10 million repositories.

•Over 150,000 enterprise customers.

•Gitee launched the University Edition in June 2018, more than 2,000 universities are using it now.

Gitee Annual reports

- 2017 ：https://gitee.com/2017annual
- 2018 ：https://gitee.com/2018annual
- 2019 ：https://oschina.gitee.io/gitee-2019-annual-report

2019 Gitee 开源项目功能分布 TOP 10

排名	功能分类	占比	排名变化
1	程序开发	24.66%	-
2	WEB应用开发	17.95%	-
3	其他开源	8.01%	↑3
4	手机/移动开发	6.45%	-
5	建站系统	6.27%	↓2
6	应用工具	5.52%	↑2
7	服务器应用	4.82%	↑2
8	开发工具	4.6%	↓3
9	数据库相关	4.19%	↑1

2019 Gitee 增速最快的编程语言

排名	语言	
1	Dart	255%
2	Rust	175%
3	MATLAB	135%
4	Shell	96%
5	C++	69%
6	Go	50%
7	C	46%
8	Lua	44%
9	TypeScript	37%
10	Kotlin	32%

编程语言

2019 Gitee 最受欢迎的编程语言

排名	语言	排名变化
1	Java	-
2	JavaScript	-
3	Python	↑1
4	PHP	↓1
5	C#	-

Why Gitee

› Large LF Edge developer community in China
   › EdgeX has over 1,000 users active in WeChat
   › Active local Baetyl community
› Developers in China experience slowness with GitHub
› China based Gitee provides a mirror from GitHub leading to faster local response times that leads to faster development
› All updates continue to be done to the main GitHub accounts. Then they are mirrored to Gitee in China. No change to any workflow, etc.
› Local APAC communities for EdgeX and Baetyl have requested Gitee mirrors to help speed their work with LF Edge Projects
› LF APAC team has developed a collaborative relationship with Gitee to help facilitate
› Lesson learned: When SIGs/WGs are considering new tooling to help better serve a local development community, advise the Project TSCs before proceeding forward with activation. Project TSC Chairs/TAC liaisons can then raise to the TAC if/when appropriate.

EdgeX Challenge Recap
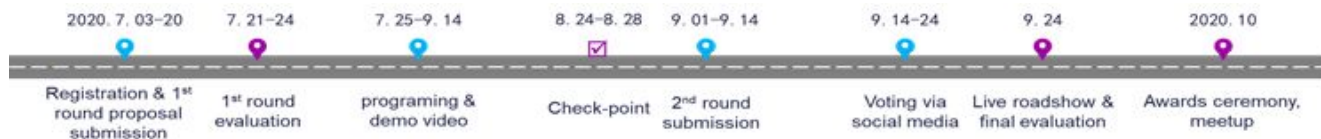## Melvin Sun, Intel
Yang Hin, LF APAC

**2
Solution Tracks**

40 Teams

**173K voters from
the community**

100 Days!

EdgeX Challenge Recap

2020. 7. 03–20	7. 21–24	7. 25–9. 14	8. 24–8. 28	9. 01–9. 14	9. 14–24	9. 24	2020. 10
Registration & 1st round proposal submission	1st round evaluation	programing & demo video	Check-point	2nd round submission	Voting via social media	Live roadshow & final evaluation	Awards ceremony, meetup

Sponsors: Canonical, DELL, HP, Intel, IOTech, Tencent, Thundersoft, VMware, and Innospace (a startup incubator)
2 tracks: Commerce, Industrial
High visibility
- Total # of news blog views: ~50K
- WeChat votes/views: 173K / 227K

Active participations
- Total # of submissions: 40 (Commerce/27, Industrial/13)
- # of teams in 2nd round: 15
- 8 prize winners, and several merit award winners

Active interactions with industry organizations/users:
- Retail associations & users
- Big players in industrial verticals
- Investors

Use-cases with blended technologies:

- **Use cases:** retail store insights, asset management, PM/DD of industrial…
- **Tech:** Edge Computing, AI, 5G, Satellites, Blockchain..

BKMs

- Large developer community base *(1K+ devs in EdgeX China community)* helps to organize successful Hackathon event.
- Partner with influential partners & communities, for promotion & recruitment.
- Intensively used social media *(e.g. posts & blogs, short video advertisements, PR articles, live streaming, etc.)* to improve exposure to the public.
- Collaborated with industry associations to collects market's pain points as candidate topics and attract participant teams.
- Organized series of training & QnA sessions to keep the community warm and ensure quality of proposals.
- Included public vote as an evaluation criteria, to amplify self-marketing effects.
- Organized match-making sessions to facilitate business landing.

Video sharing

›   Opening speech

https://space.bilibili.com/550595847/channel/detail?cid=138775

›   Event Snapshots:

https://drive.google.com/file/d/1YipxSqKCjwryLSCKtCBiOLeQZ1pBsMdf/view?usp=sharing

›   Final proposals:

https://drive.google.com/drive/folders/1SUYLtgnmiqFAciqqCpaaP1Wn8uMvB0P4?usp=sharing

›   Archive of live streaming roadshow

https://www.bilibili.com/video/BV1yK4y1h761

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Thank you to all our sponsors!

Board Meeting Recap / 2021 Planning
Jim St. Leger

Primary Charter of the TAC

"Facilitate communication and collaboration among multiple Technical Projects"

2020 TAC Objectives

Foster collaboration across all LF Edge projects

Create a "better together" environment

Enable and encourage cross-project collaboration (& interoperability)

2021 LF Edge TAC Objectives Discussion Started Oct 7th

2020 TAC Activities

› Architectural White Paper – Across all projects.

› Cross Project (virtual) Demos – ONES 2020

› Brought on Open Horizon and Secure Device Onboard (SDO) Projects

› New Project Onboarding/GSG https://wiki.lfedge.org/display/LE/Technical+Project+Getting+Started+Checklist

› Annual Project Review https://wiki.lfedge.org/display/LE/Project+Annual+Reviews

Project Annual Reviews

Created by Brett Preston, last modified on Jul 07, 2020

GOAL

The goal of the LF Edge Annual Review Process is to provide a Project Health Assessment. Health indicators shall include a quantifiable review against their current Stage expectations and acceptance criteria (meets/needs improvement/missing).

Understanding that the goal for any Project should be to advance towards Stage 3 (Impact), the TAC community will work with the Project to help address items tagged needs improvement/missing, providing consult and share best practices as part of the Review Process.

The TAC shall provide feedback as to whether the submitting Project is meeting current Stage requirements. Additionally, if the submitting Project has intentions to advance to the next Stage in the upcoming year, the TAC shall provide input as to progress towards the requirements for acceptance into the next stage.

Results of the Annual Review Process shall be posted to the Wiki.

2020 TAC Activities

› Architectural White Paper – Across all projects.

https://www.lfedge.org/resources/publication-download/
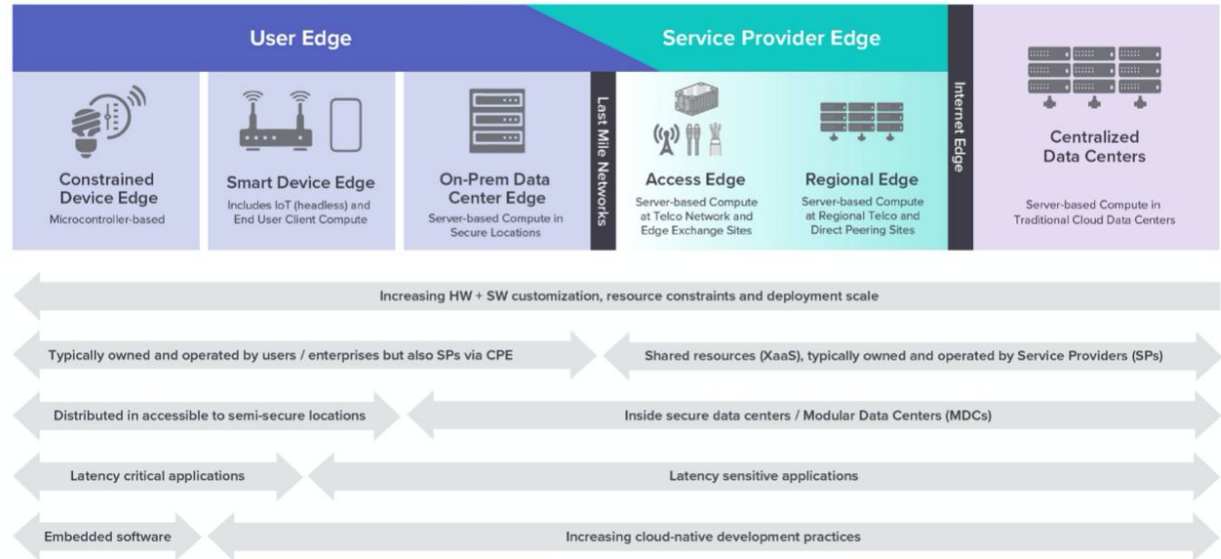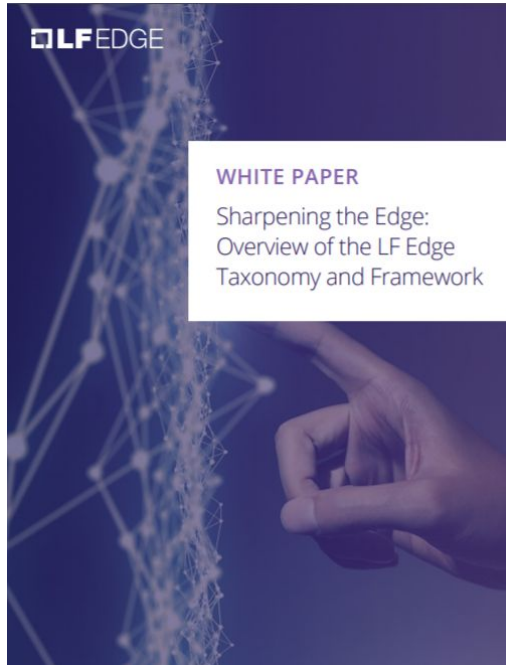
LF Edge Summary

Vision: *Our software & projects enable rapid productization of Edge platforms by leveraging end user input to drive and supply the necessary building blocks (and/or frameworks, reference solutions) to facilitate integration and interoperability for Edge Computing across Telecom Service Providers, Cloud Providers, IOT & Enterprises*

Projects

IMPACT - STAGE 3	GROWTH - STAGE 2	AT LARGE - STAGE 1
AKRAINO	EVE	HOME EDGE	BAETYL	OPEN HORIZON
EDGE X FOUNDRY	FLEDGE	STATE OF THE EDGE	SECURE DEVICE ONBOARD

Technical Project Getting Started Checklist

Created by Brett Preston, last modified on Jul 27, 2020

(Project input always welcome to add to/enhance the list below)

Welcome to LF Edge! Below is a checklist to help you get started as a new technical project.

Please bookmark this page and "watch" (top right of page to enable watching) the page for updates. For any questions, please email info@lfedge.org to connect with LF Edge staff.

Please copy and paste this checklist onto your project wiki to track your progress - Please include links to your finished work.

If you are not familiar with Confluence/Wiki or need a refresher, visit the Confluence Overview.

- ☐ Upon LF Edge TAC Project acceptance, a series of asset transfers will be set in motion. Standard transfer list includes:
    - ☐ Trademark (Unless we are coming up with a new name for the Project or the Project is newly created, all Project names need to be transferred to LF Projects, LLC to be held fo if no trademark registrations have been secured in the Project's name.)
    - ☐ Website Domain (if Project has an existing site)
    - ☐ Social Media Handles (if any)
    - ☐ GitHub (LF enforces 2FA on all of our organizations. Please also inform all developers to enable 2FA on their Github accounts, if they haven't already.)
- ☐ Project Integration into LF Edge Overview Deck(s)
    - ☐ Work with LF Edge staff to add Project to main Overview Deck, Getting Started Guide (pointed to under Resources tab of https://www.lfedge.org/ as well as presented at Conf
- ☐ Project Logo
    - ☐ Transfer existing or work with LF Creative Services team to build out/finalize a new logo. Other LF Edge Project logos can be seen at https://www.lfedge.org/projects/
- ☐ Review and Bookmark the LF Edge Wiki Homepage
    - ☐ Familiarize yourself with the key resources for LF Edge
- ☐ Project Mail Lists
    - ☐ Subscribe to the project specific mail lists via the LF Edge Groups.io - Subscribe to any other mail lists your are interested in
        - ☐ Projects should establish, through the LF Edge staff, an initial set of mail lists (examples: project@, project-tsc@, project-devel@)
    - ☐ The Project Lead(s) should be set as moderator for ongoing management of the project specific mail lists - LF Edge staff can assist with moderator permissions
- ☐ Project Meeting Calendars
    - ☐ Work with LF Staff to provision Zoom meeting Host access for your Project meetings
    - ☐ Once meeting(s) have been scheduled in Zoom, add them to the Groups.io mail list calendar - Example, Example
        - ☐ Community members can Subscribe to all meeting invites for mail lists which they belong to at https://lists.lfedge.org/calendar (note: if you are not subscribed to any m
            - ☐ For legacy Projects which have their own Groups.io instances, community members will need to subscribe to their meeting invites separately (Akraino Edge Stack
        - ☐ Current advisory notice: Known integration issue between Groups.io calendars and some mail clients (due to time zone change). Recommended solution is to schedule all mail clients (Outlook, Gmail, etc.)
    - ☐ A Community Meetings & Calendar page can be created on your Wiki with detailed instructions - Example
- ☐ Project Slack
    - ☐ Establish Project channels on the LF Edge Slack (examples: #project, #project-help, #project-tsc) - Note Slack's message archiving limits; encourage usage primarily for short-t instances.
- ☐ Project Wiki
    - ☐ Expand upon the wiki created for the project - The wiki will be publicly available
        - ☐ Example wiki pages include: Homepage, Introduction/Overview, TSC, Calendar, Documentation, Releases, Community Governance, etc.
- ☐ GitHub Recommended Practices for LF Edge Projects
    - ☐ Review and implement the GitHub Recommended Practices for LF Edge Projects (Links to LF AI – For LF Edge TAC Consideration on whether to adopt a similar set of recomme
- ☐ LF Edge PPT/Google Slides Template
    - ☐ Please email LF PM for PowerPoint/Google Slides template, for use in TSC meetings, etc..
- ☐ Project Technical Charter

LF Edge – Akraino – Community Lab

› Great resource for Akraino

› Great resource for LF Edge

› Continue to expand use of lab resources across all LF Edge projects

https://wiki.akraino.org/display/AK/Shared+Community+Lab

LF Edge TAC - Mentorships (CommunityBridge)

› Open Horizon [accepted four mentees](#) for the fall term using the LF CommunityBridge site for [their mentorship program](#)
› Mentorships covered under [Expanded Mentorship Program](#)
  › Thanks to Intel for help sponsoring!
  › Expanded Mentorship Program scheduled to run through June, 2021 -- at which point LF Edge could consider budgeting to fund additional LF Edge Project mentorships (similar to LF Networking, Hyperledger)
› Blog post will be generated on the OH program

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TAC - Focus Areas for 2020 (what to emphasize / de-emphasize in 2021?)

Target areas identified for the TAC to direct focus, beyond PLD/Project Review

1. **Architecture (Tech > LF Edge) - Output: TBD (*White paper?*)**
2. APIs Document, Align and Publish
3. SDO/Consortiums expansion
4. **Forcing function - Use Case or Deployment > Demo across all projects**
5. Technical overlap/unification
6. Cross Project Collaboration
7. IT Efficiencies

Out of Scope for the TAC (for now)

1. Vertical Solutions (End User / SIG Program)
   a. At Board/SPC level

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LF Edge TAC - Focus Areas for 2021: Continued Discussion

› One idea raised was for deeper (technical) solution briefs around Use Cases and Deployments
  › Would require commitment (volunteers) from the TAC, Projects, as well as the SPC
› (from prior discussion) White Papers
  › LF Edge level or Project level?
  › General (2020 introduced taxonomy/Projects) or Specific? (e.g. Security, Telemetry)
  › Who would be the audience?
  › Post publishing, vehicle for feedback? Success metrics?
› Other initiatives?
  › Open Edge Services Catalog - creation and cross-project support
  › Common way to document APIs for all the projects

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Upcoming External Events

› KubeCon/CloudNativeCon North America: 17-20 November, 2020 - Virtual
› Open Source Summit Japan: 2-4 December, 2020 - Virtual
› Open Source Summit North America: 4-6 August - Vancouver, Canada
› Open Source Summit Europe: 29 Sept - 1 Oct, 2021 - Dublin, Ireland
› IoT Solutions World Congress: 5-7 October, 2021 - Barcelona, Spain

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

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LF Edge Webinar Series

› Open Horizon
  › Scheduled for **Thursday, November 19 at 8am PST**
  › https://zoom.us/webinar/register/WN_tYli1JZ1RWq1pml8FuPRPw
  › "Secure Application Management for Machine Learning & Constrained Devices"

› Akraino Edge Stack
  › Held Thursday, April 2 - Your Path to Edge Computing with Akraino Edge Stack
  › On-demand recording available at: https://zoom.us/webinar/register/WN_Zjdo4-5fTOSIqH7pL8iHrQ
› EdgeX Foundry
  › Held Thursday, April 23 - EdgeX Foundry 101: Intro, Roadmap and Use Cases
  › On-demand recording available at: https://zoom.us/webinar/register/4515850788014/WN_xCd6YPjEOrCwLiFhBWPKug
› Project EVE
  › Held Friday, May 29 - Building the "Android of the IoT Edge"
  › On-demand recording available at: https://zoom.us/webinar/register/6415888722675/WN_35oZJ3hrOE69snMaiJUTPg
› White Paper
  › Held Thursday, July 9 - Demystifying the Edge with the new LF Edge Taxonomy and Framework
  › On-demand recording available at: https://zoom.us/webinar/register/WN_icv5h6wFTcuw9O0xvMpgLw
› Fledge
  › Held Thursday, August 13 - How Google, OSIsoft, FLIR and Dianomic use Fledge to implement Industrial 4.0
  › Recording available at: https://www.youtube.com/watch?v=6JXNv3AIWog
› State of the Edge
  › Held Thursday, September 17 - State of the Edge: Exploring the Intersection of IoT, AI, 5G and Edge Computing
  › On-demand recording available at: https://zoom.us/webinar/register/8115959695936/WN_4rt-MmP1Rl6Vkzn3ULpiAA
› Home Edge
  › Held Thursday, October 15 - Home Edge: How Your Home Devices Get Deployed in An Edge Computing Services Ecosystem
  › On-demand recording available at: https://zoom.us/webinar/register/WN_uSlgb-R5O4etkDhxoSXISQ

› More to follow…

Upcoming Project Events

› To be added...

› Projects can add their events to this list by sending the Wiki page listing the information to info@lfedge.org

Next Meeting

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Next Meeting

› Next Meeting: Wednesday, December 2 @ 7am PST
  › Project Annual Reviews - Baetyl, EVE, State of the Edge
    › Akraino (due 12/3/20)
  › Other Topics?

Thank You

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Resources

Project Resources: Getting Started Checklist

1. https://wiki.lfedge.org/display/LE/Technical+Project+Getting+Started+Checklist
2. Best Practices Guide for new, and existing, LF Edge Projects to define/refine/enhance their Project Management
3. Will be sent to Project TSC Leads for additional input / examples
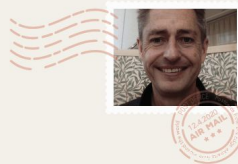4. Welcome feedback in the TAC as well

CII Best Practices Badge

› Identifies a set of best practices for OSS projects, focusing on security
› Provides a mechanism for projects to self-certify that they meet these criteria
  › Automation helps & prevents some false answers
› Full presentation here:
  › https://github.com/coreinfrastructure/best-practices-badge/blob/master/doc/cii-bp-badge-intro.pptx
› Website where projects can receive a badge here:
  › https://bestpractices.coreinfrastructure.org
› EdgeX Foundry and Open Horizon badging already in progress!
  › https://bestpractices.coreinfrastructure.org/en/projects/1226
  › https://bestpractices.coreinfrastructure.org/en/projects/4300
› LF Edge Wiki tracks badge progress here: https://wiki.lfedge.org/
› Proposal: All LF Edge projects be encouraged to get a CII Best Practices badge

State of the Edge - 2021 Report - Postcards from the Edge

And Now, The Time Has Come: 5G and the Edge

We're at a watershed moment in the evolution 5G, the "put-up or shut-up" moment when operators are assessing the commercial value to justify their investment in a 5G buildout. This is what always happens in the marketing and investment dance of a new cellular generation.

Recent research concludes that the full value of 5G is still being discovered, with select operators like SK Telecom aggressively exploring edge service that can deliver outsized value and demand premium.

Geoff Hollingworth
CMO, MobiledgeX

Who Will Build and Pay for the Edge ?

eed and ow the special- IoT and

ers may e edge efficient helm of ng and able to

Monica Paolini
Principal at Senza Fili

The Data Layer Challenge at the Rapidly Evolving Edge

In the early days of the cloud, visionaries predicted that enterprise infrastructure would quickly migrate to few large cloud providers. Unfortunately, the early cloud hype got ahead of reality—because public cloud faces a huge issue it can't solve on its own: latency. The edge is developing quickly, but the initial emphasis has been on providing compute capabilities, with little thought given to storage.

Ellen Rubin
CEO, Clear Sky Data

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State of the Edge - 2021 Report

LF Edge Project Asks

1. **Designate a Liaison**
   a. It would be ideal if the each Project could assign a volunteer to be the primary liaison with State of the Edge. This would not require much work, just a conduit for info and coordination. Intro to me directly via email.

2. **Align with the Glossary**
   a. Now that LF Edge has adopted clear terminology at the top level, we want to work towards aligning the project publications and documentation. Ideally, each Project would formally adopt the *Open Glossary of Edge Computing* and ask all its writers and contributors to use it as a style guide.

3. **Landscape.**
   a. There are probably many LF Edge contributing and supporting companies who have not yet been added to the LF Edge Landscape. I can help with this process, but I need .SVG logos. This is free advertising so it should be easy to incent folks.

4. **Postcards from the Edge**
   a. Like last year, the 2021 State of the Edge will include outside contributions of 500-1000 words. These need to be educational and not advertorial, but the author and their company will get credit. We will publish an abstract in the 2021 report and run the full essay on the blog.

5. **Project Update for State of the Edge**
   a. We plan to include a 2-3 paragraph "state of" for each of the LF Edge projects. Please assign somebody to this. We will want to see drafts in early November.

6. **Consider fielding and editor**
   a. If a Project/Member wishes to have input on the 2021 State of the Edge report, the best way is to find someone willing to be a section editor. This requires reading and commenting on at least one chapter of the 2021 guide, and this will need to be done under fairly tight deadline in November.

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LF Edge TAC Projects / PLD Update - Pipeline

Note: Projects listed below have indicated some level of interest since Project Launch.

› Coaty (Siemens) (*invited August 21, 2019; targeting Q1*)
› Flogo (Tibco)
› Open19 (via Vapor.io)
› Wormhole (OSS name Flowgate)

› Rafay (Rafay Systems)
› Project Sandstar (Anka Labs, Inc.)
› Synse (Vapor.io)
› Cisco IoT/Agribusiness OS Project (Cisco)
› infinimesh (infinimesh)

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Linux Foundation edX and Training Courses

› Business Considerations for Edge Computing:
https://www.edx.org/course/business-considerations-for-edge-computing

› Getting Started with EdgeX Foundry (LFD213):

https://training.linuxfoundation.org/training/getting-started-with-edgex-foundry-lfd213/

Pushed to Next Meeting

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