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Node-RED Conference report

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Node-RED Conference Tokyo 2019

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The conference to share use cases and technologies related to Node-RED (OSS) hosted by Hitachi and operated by volunteers from both user group of Node-RED and Hitachi

- Date and Time: Thursday 18th, July 10:00-17:15
- Venue: Hitachi Baba memorial hall and Cafe library at CRL
- Number of attendees: 178
- Objectives:
  - ✓ To expand Node-RED community, Node-RED user companies shared their use cases.
  - ✓ To develop Node-RED functionality along with user requests.
    Hitachi contributed to create connections with users and developers.

Hitachi Baba memorial hall

Cafe library

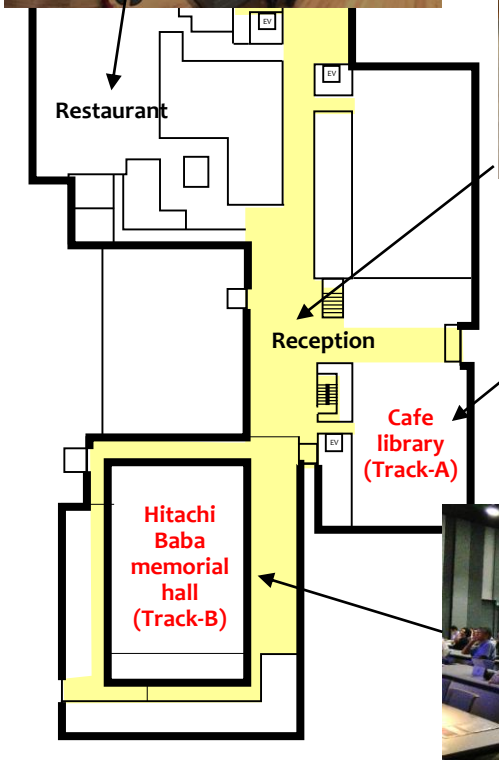
Attendees and speakers

- Details of 178 attendees
  - Companies (# of attendees): Hitachi (22), Fujitsu (10), Uhuru (9), Professors (6), NEC (6), Panasonic (4), IBM (4). Bosch (4), NTT (2), Softbank (2)
  - From overseas: India, China, Taiwan
- Speakers: Fujitsu, Panasonic, NTT Com, Sakura internet, Siemens, IBM, Nagoya University, Uhuru, Tokyo City University, LAPIS Semiconductor, Plat' Home, Pumpkin Heads, 1ft-seabass, Hitachi
- Volunteers: 14 volunteers from user group, 4 employees from Hitachi

Program and Venue

- For keynote, we used Hitachi Baba memorial hall at CRL.
- 12 sessions in 2 tracks at Baba memorial hall and Cafe library after the keynote.

Time	Café library (Track-A)	Hitachi Baba memorial hall (Track-B)
10:00-11:30	**Keynote** Seigo Tanaka, 1ft Seabass / Atsushi Kojo, Uhuru Kazuhito Yokoi, Hitachi / Taiji Hagino, IBM	
11:45-12:15	**Mugbot, Node-RED in education research** Seita Koike, Tokyo City University	**IoT solutions by semiconductor company using Node-RED** Naotaka Saito, LAPIS Semiconductor
12:30-13:00	**Good relations between IoT gateway and Node-RED -Node-RED in OpenBlocks IoT-** Masato Minda, Plat Home	**enebular, Node-RED environment from beginners to professionals** Wataru Yamazaki, Uhuru
13:00-14:00	**Lunch**	
14:00-14:30	**In-house IoT prototyping platform using Node-RED** Takeshi Ueno, Panasonic	**3 stories to apply Node-RED to actual IoT business** Tomohiro Nakajima, Fujitsu
14:45-15:15	**Lessons learned after 100 hands-on with Node-RED** Yuki Nishida, Sakura internet	**Node-RED, the best translator in manufacturing industries which have various data** Hodaka Akiba, Siemens
15:30-16:00	**Hello, TJBot with Node-RED to learn AI and IoT** Mutsumi Sakaigawa, Pumpkin Heads	**How to use Node-RED in office IoT system** Yoshiyuki Yoshino, NTT Communications
16:15-16:45	**Remote game controller using IBM Watson IoT and Node-RED** Kei Kimura, IBM	**Node-RED meets Edge Computing for Smart Cities** Takuro Yonezawa, Nagoya university
17:00-17:30	**Goodbye and Thanks!** Seigo Tanaka, 1ft Seabass	

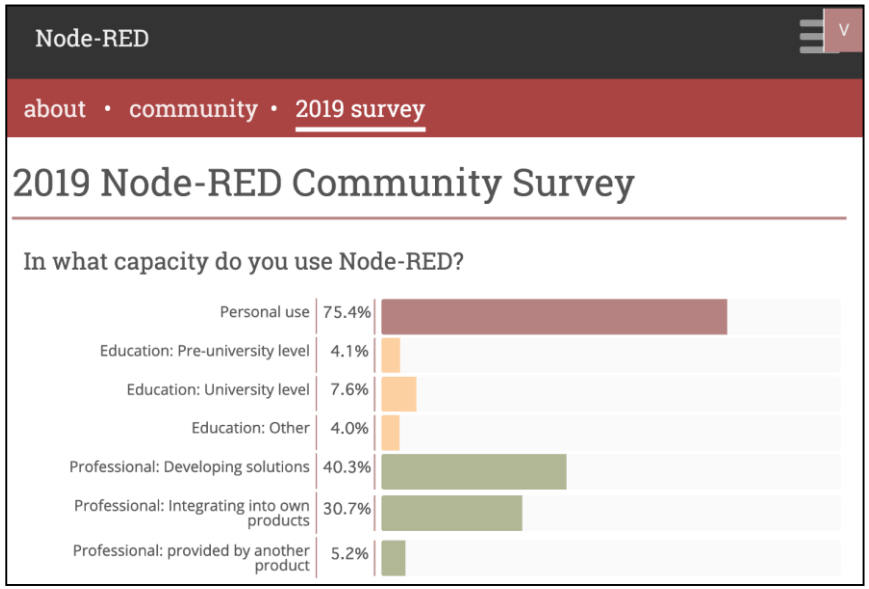


Kyoso-to building at CRL

Keynote

Admin members (4 people including Hitachi Yokoi-san) in Node-RED user group talked the followings in the keynote session.

- The result of Node-RED community survey
  - Use cases in business and education are increasing.
  - The major use cases are in personal use, home automation, and Raspberry Pi.
- Video letter from Node-RED maintainers.
- Hitachi introduced merits to join Node-RED development based on our experience.



Community survey

Video letter from Node-RED maintainers

https://nodered.org/about/community/survey/2019/ https://drive.google.com/file/d/1ytG4nxgAH2hsLvlBZH6C4uGrhGj8Dbev/view
https://www.youtube.com/watch?v=QC4bbie-5z0

Sessions from Node-RED user companies

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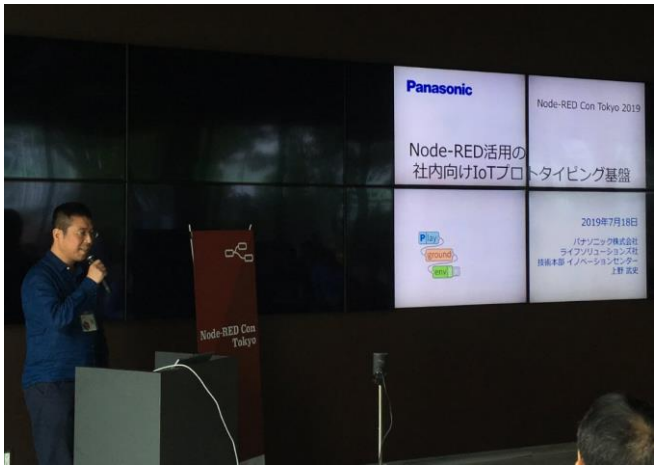
Node-RED user companies introduced user cases in their session.

Nakajima-san, Fujitsu



Ueno-san, Panasonic

Yoshino-san, NTT Com

Hagino-san, IBM

Akiba-san, Siemens

Yokoi, Hitachi

Responses on Twitter

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On Twitter, we received a lot of positive comments about the conference.
For example, “We’ve learned many use cases” and “We enjoyed the conference”.

https://togetter.com/li/1378074

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Appendix

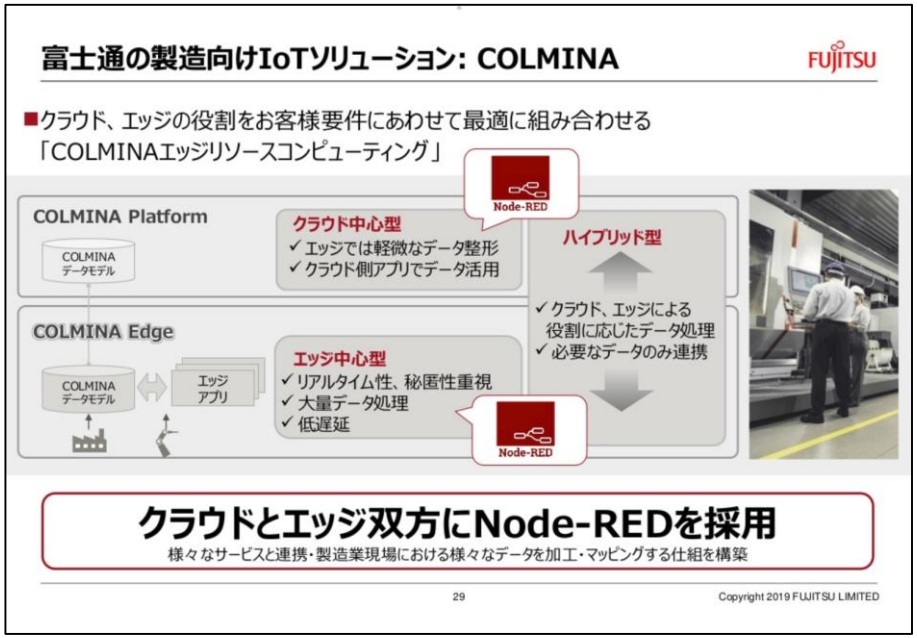
- Presentations from speakers
- Additional information

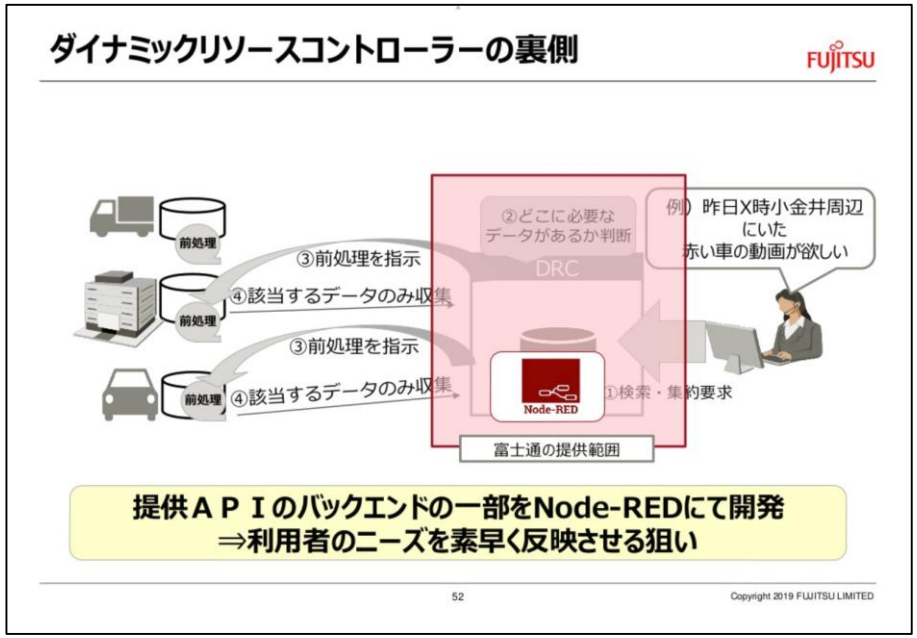
Fujitsu

Fujitsu has used Node-RED in their field system and PoC since 2017.

[Use cases]

- Connections between industry robots and “COLMINA”, their platform for manufacturing
- “Dynamic resource controller”, their platform to utilize massive IoT data
- Node-RED connector to send data to their IoT Platform for PoC





https://www.slideshare.net/TomohiroNakajima/noderediot-156234107 https://www.youtube.com/watch?v=gur1GwaZYAc

Panasonic

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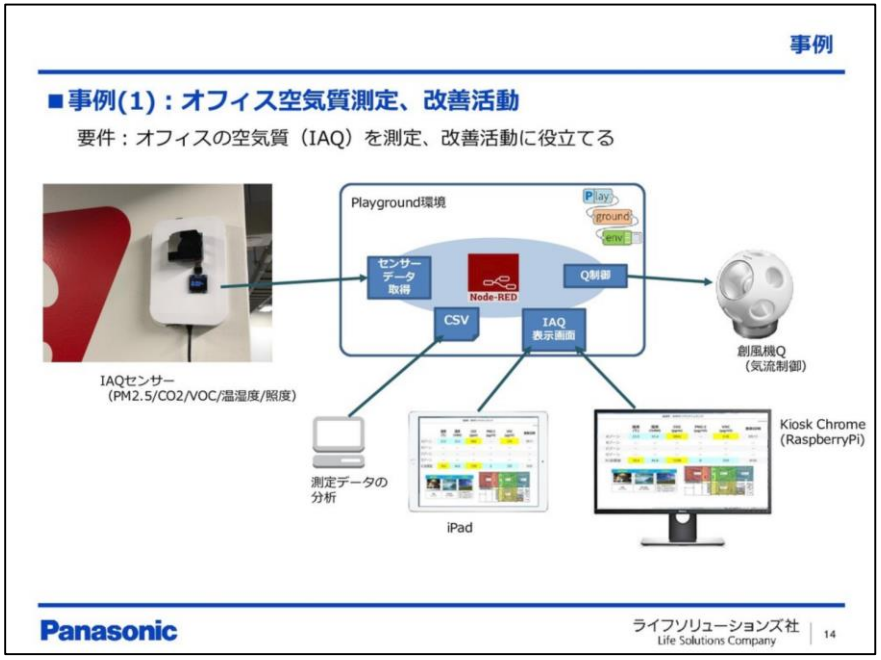
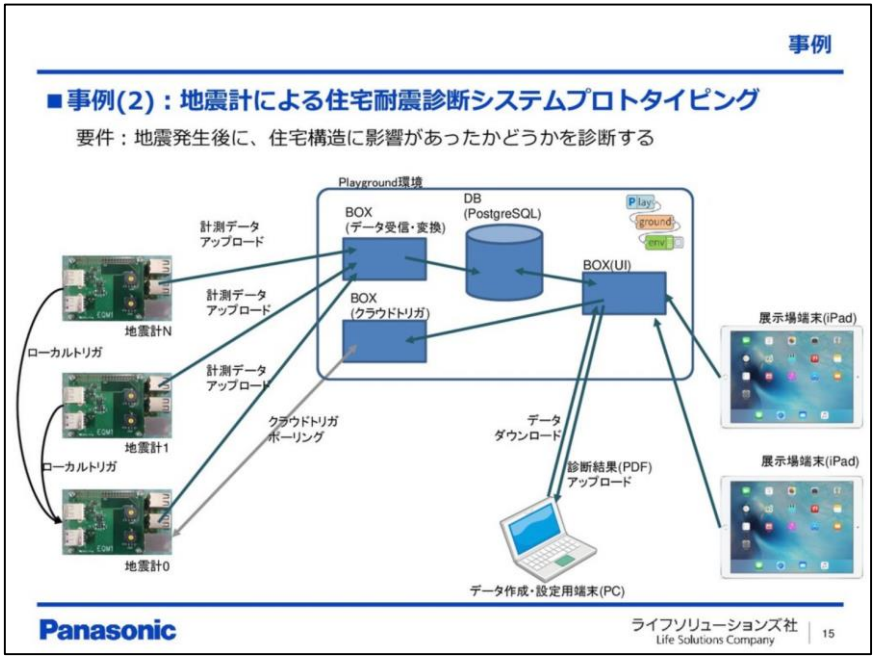
They have used Node-RED in the in-house environment deployed on GKE (Currently, 680 instances for130 users). The teams which develop sensors tend to use the environment.

[Use cases]

- Dashboard to visualize air pollution in their office
- Visualization of seismograph data to understand how much earthquake affects house
- Development of backend API for services





https://speakerdeck.com/utaani/node-redwohuo-yong-sitashe-nei-xiang-keiotpurototaipinguji-pan
https://www.youtube.com/watch?v=si2cYtrOIes

NTT Communications

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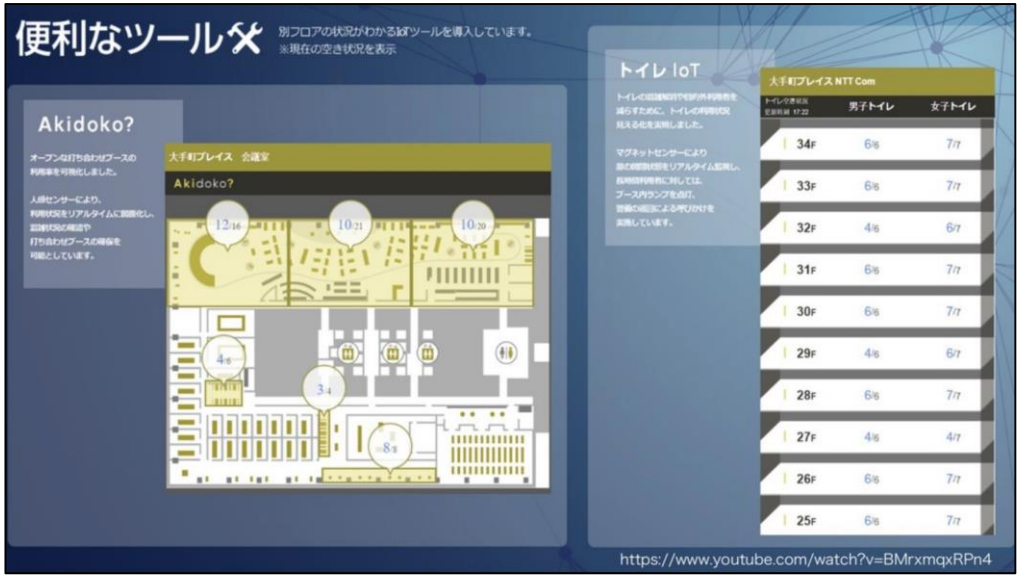
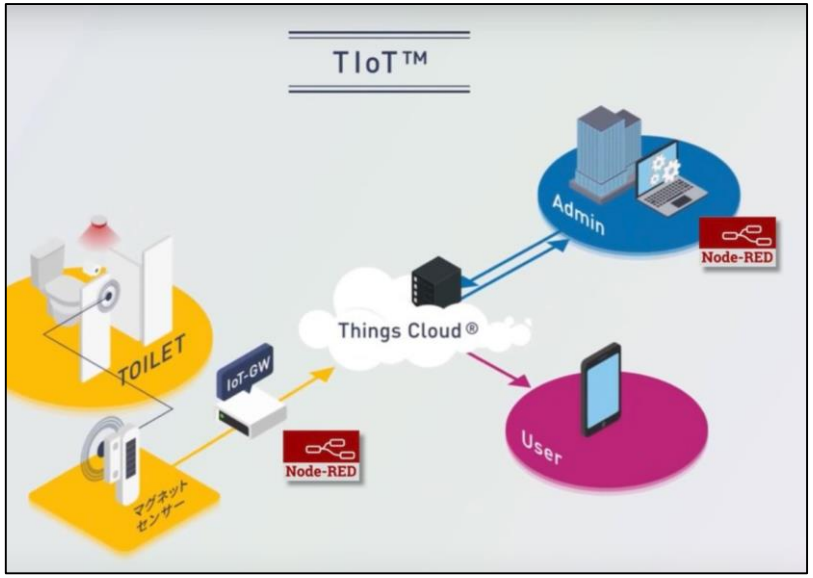
Node-RED has been a major development environment in NTT Communication since 2018 because of IoT solution development and collaboration with device partners.

[Use cases]

- Vacancy visualization of meeting rooms and toilets at their headquarters (To control over 1000 IoT device, Node-RED has been used in both IoT gateway and device configuration management tool.)





https://speakerdeck.com/ayoshino/node-red-for-iot https://www.youtube.com/watch?v=otGcwsXNJXM

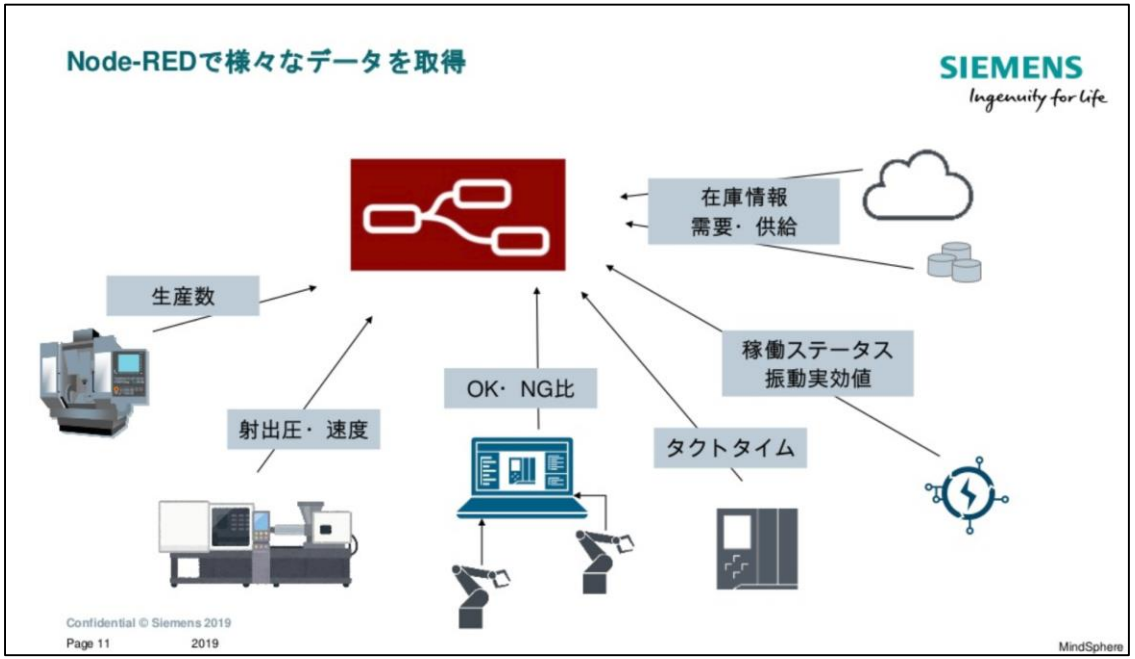
Siemens

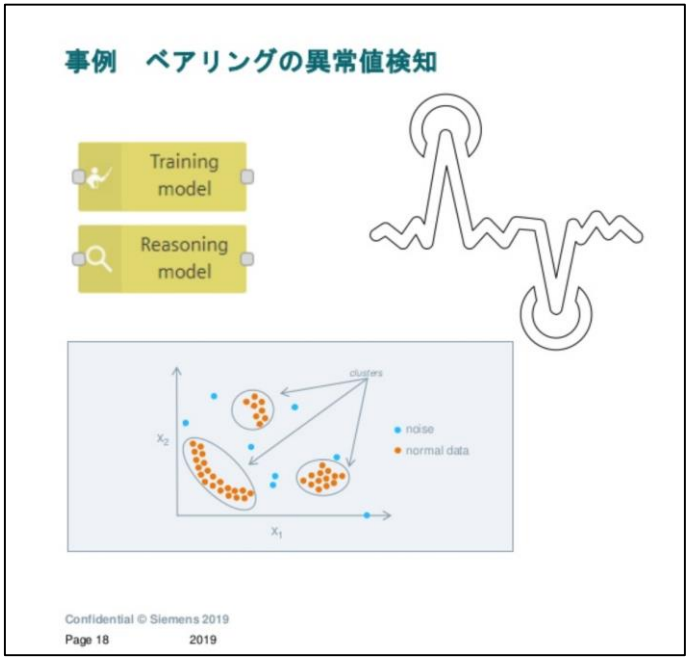
Siemens has used Node-RED in their cloud and edge environments.

- In the cloud, they provide functionalities on their MindSphere. For example, data visualization using dashboard, data extraction using filter node, and analytics using statistics node are available.
- In edge, they are using Node-RED to collect data via various protocols (PLC, OPC UA, Modbus, BACnet, cansend) on devices and send them to MindSphere.

[Use cases]

- Interpolation process to fill missing data while an edge device sends them to cloud
- Anomaly detection from temperature and vibration values of bearing





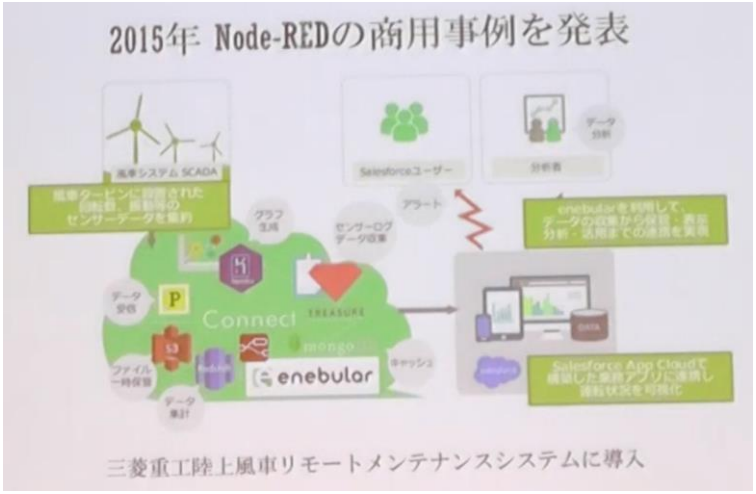
https://www.slideshare.net/nodered_ug_jp/nodered-157490470 https://www.youtube.com/watch?v=Svttitq9cOw

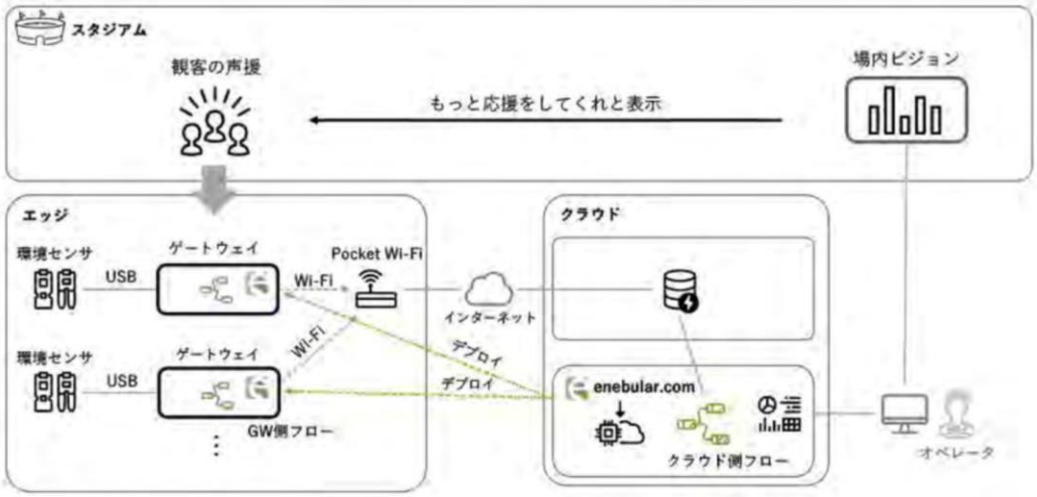
Uhuru

Uhuru started to use Node-RED in 2015. They have original Node-RED environment, “enebular” to conduct business with partner companies.

[Use cases]

- Windmill maintenance system for Mitsubishi Heavy Industries
  (Data collection and alerting system using data from more than 1000 windmills in North America)
- Atmosphere visualization for Murata Manufacturing Company
  (Node-RED is used in edge gateways and dashboard)
- Digital display to show enthusiasm in the stadium for Shonan Bellmare
  (Systems in both edge and cloud use Node-RED)





https://speakerdeck.com/wyamazak_uhuru/use-node-red-faster-and-deeper

Nagoya university

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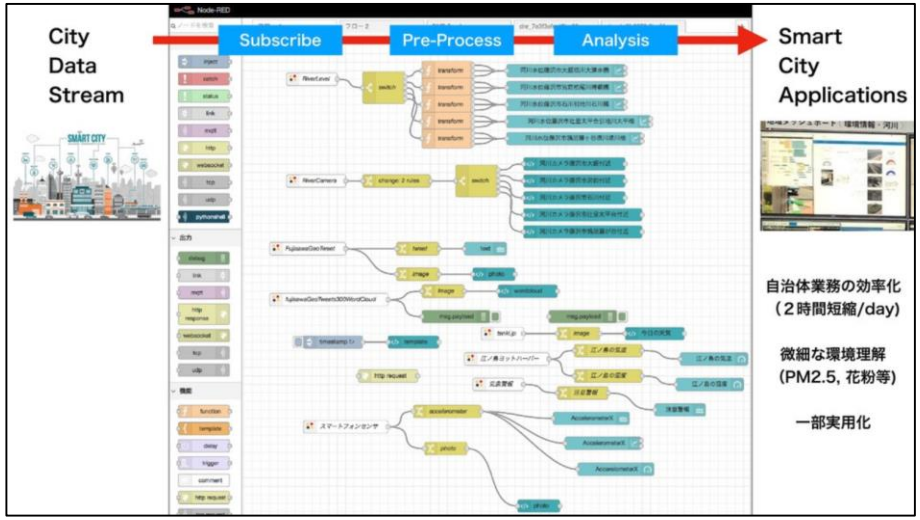
They have used Node-RED for smart city platform which collects and analyzes data from cities.
They manage 500K sensors and handles 20 GB data per day.

[Use cases]

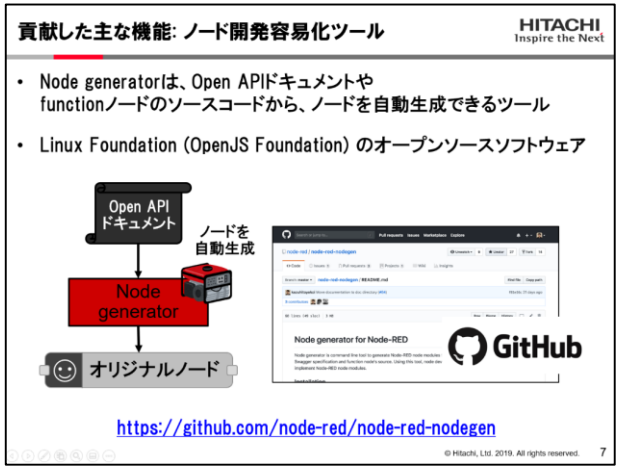
- Visualization of air pollution and work streamlining for Fujisawa municipal office
  (Node-RED dashboard to show city information has been installed at Fujisawa municipal office.)
- Road maintenance system using image recognition to detect the faded white lines
  (In the system, distributed Node-RED orchestrates edge devices installed to all garbage cars in Fujisawa city)
- As the next step, they are going to develop a dashboard for city planning and human flows using traffic data from Meitetsu bus and Hakone tozan group

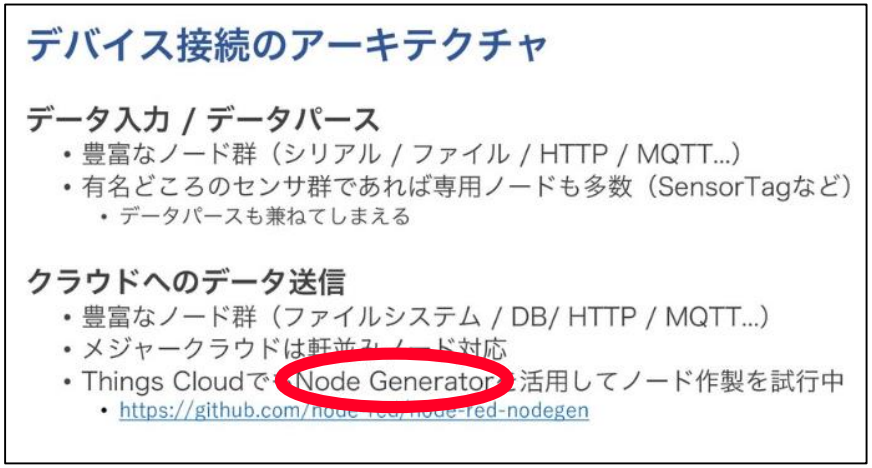


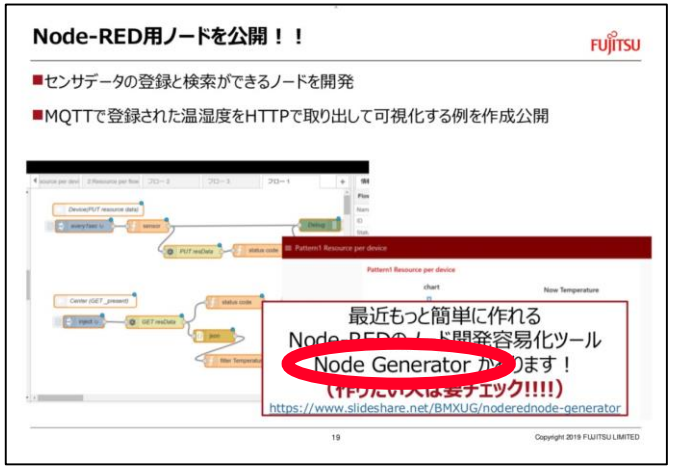
https://speakerdeck.com/noderedugjp/node-red-meets-edge-computing-for-smart-cities https://www.youtube.com/watch?v=iEFXqNd4FqU

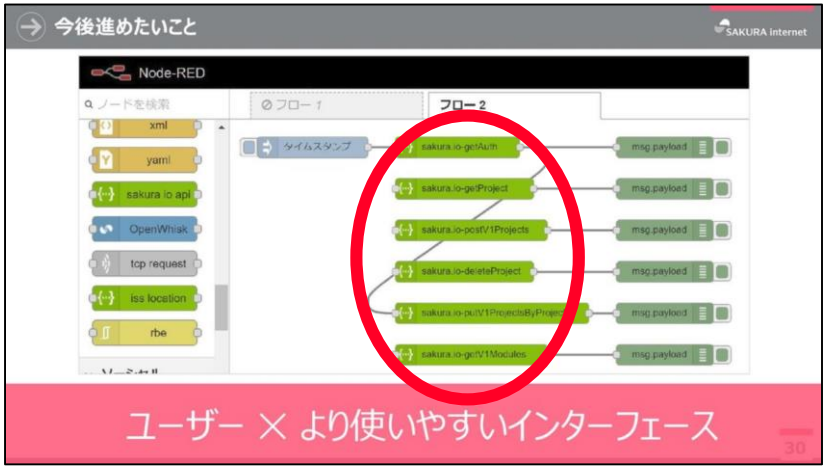
Prevalence of Node generator

- Fujitsu, NTT Communications and Sakura internet introduced Node generator which Hitachi developed and published as one of the Node-RED project.
- They're going to utilize the tool to connect their services to their Node-RED environments.



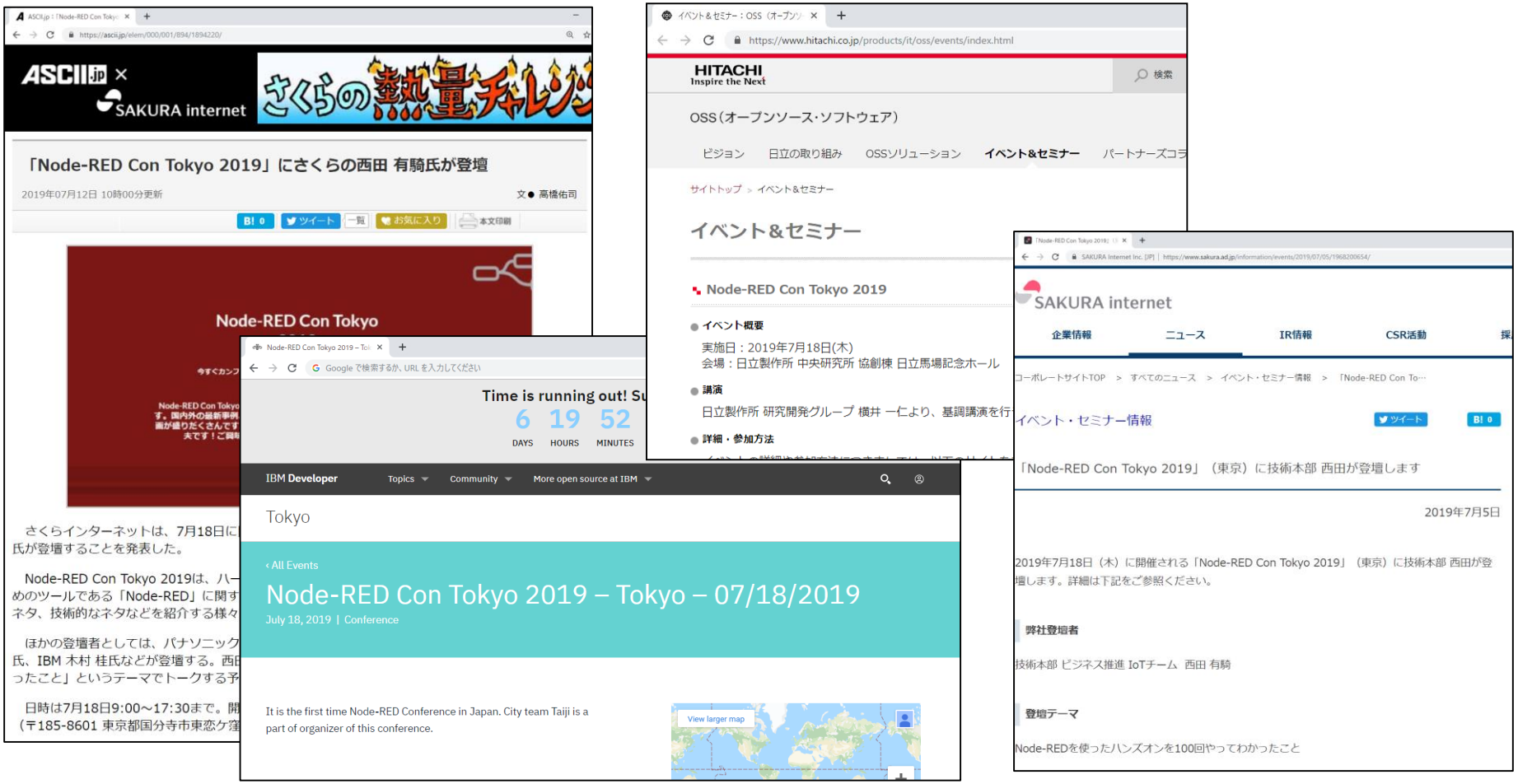






Announce about the conference

- Speakers and news site announced the conference on their website in advance.
- In Fujitsu and NEC, their employees informed the event internally.



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https://developer.ibm.com/events/node-red-con-tokyo-2019-tokyo-07-18-2019-tokyo-2019-7-18/
https://www.sakura.ad.jp/information/events/2019/07/05/1968200654/