

# Web Application in J-PARC

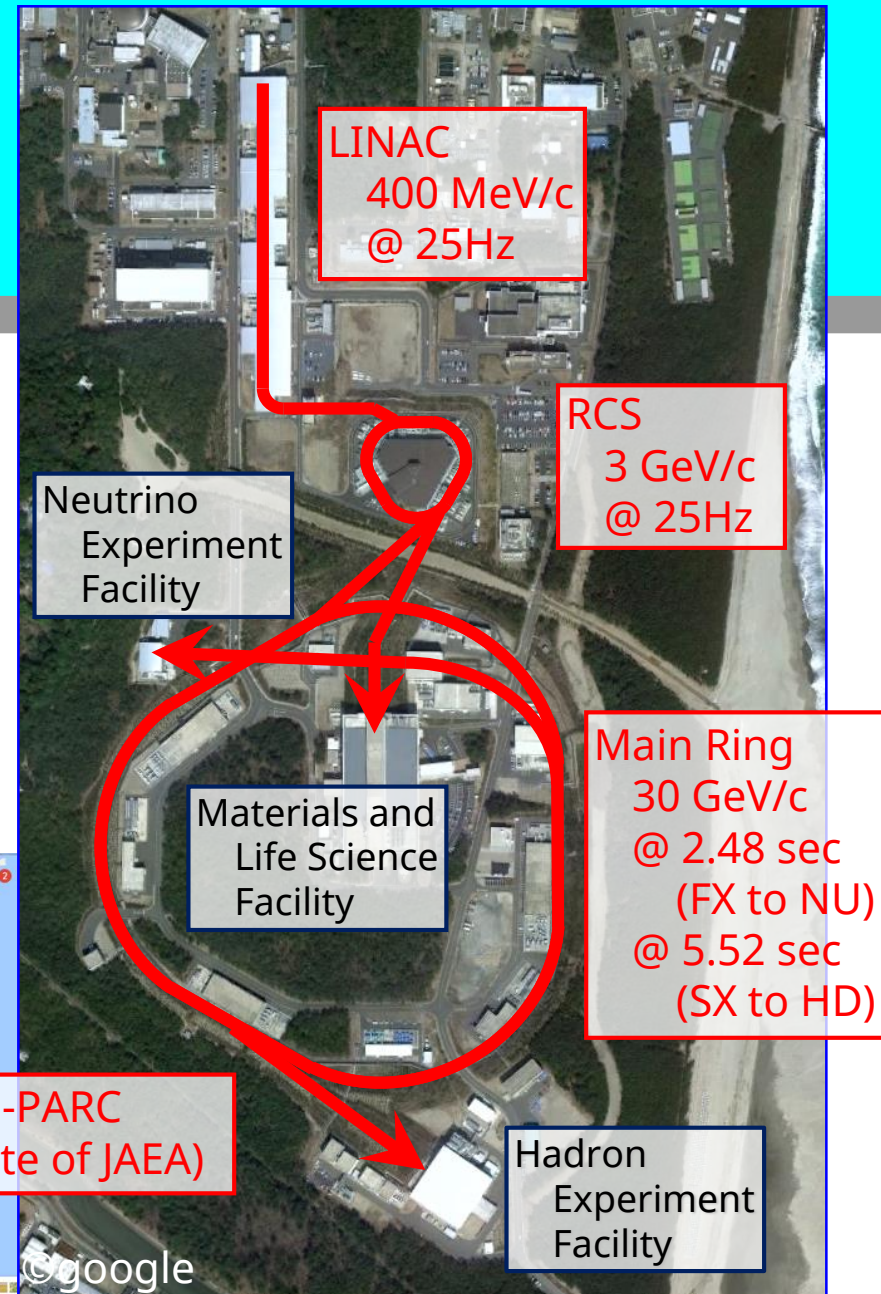
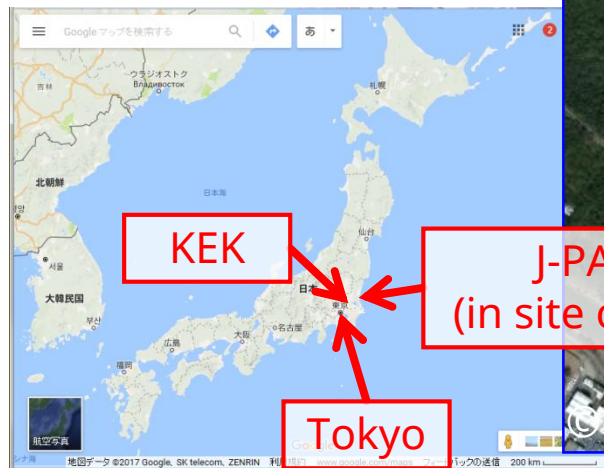
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# J-PARC

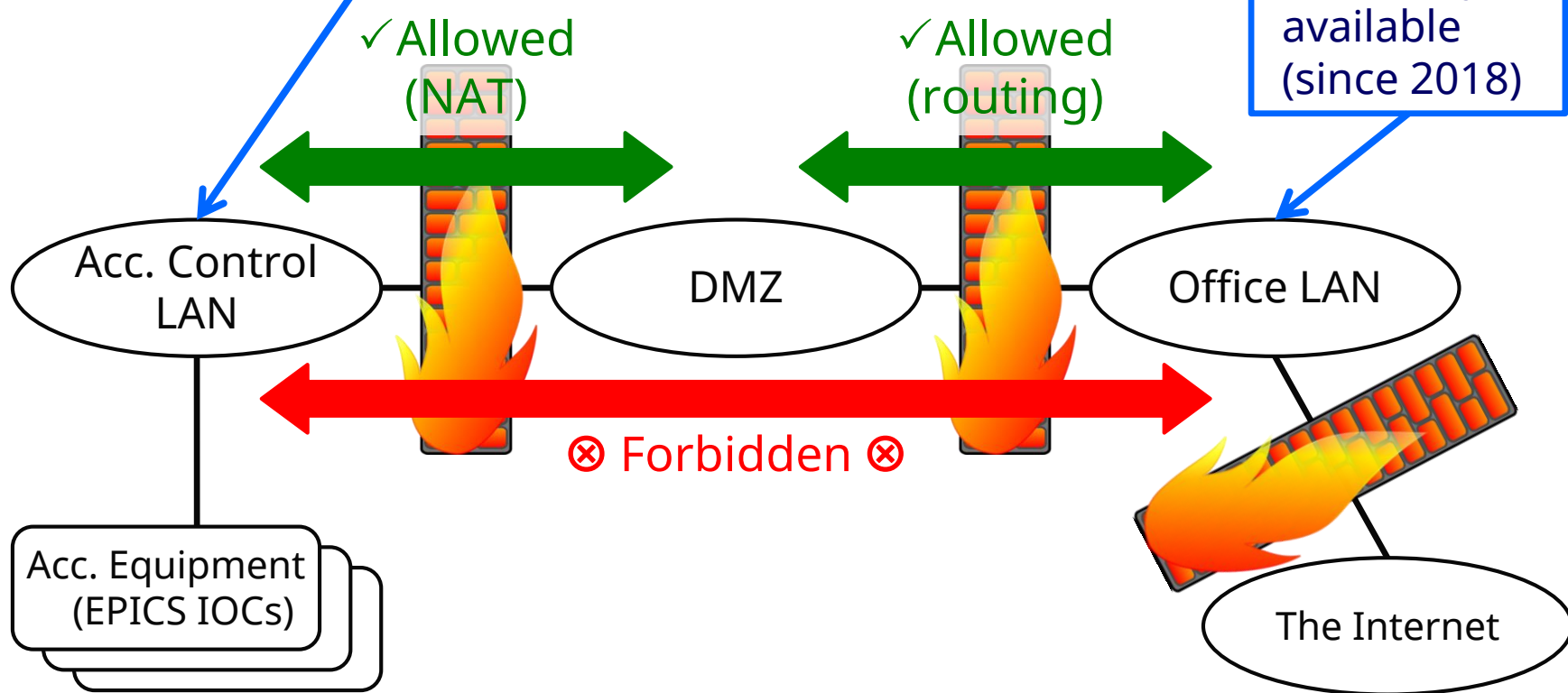
- Japan Proton Accelerator Research Complex
- Joint project of :  
KEK (High Energy Accelerator Research Organization)  
and  
JAEA (Japan Atomic Energy Agency)



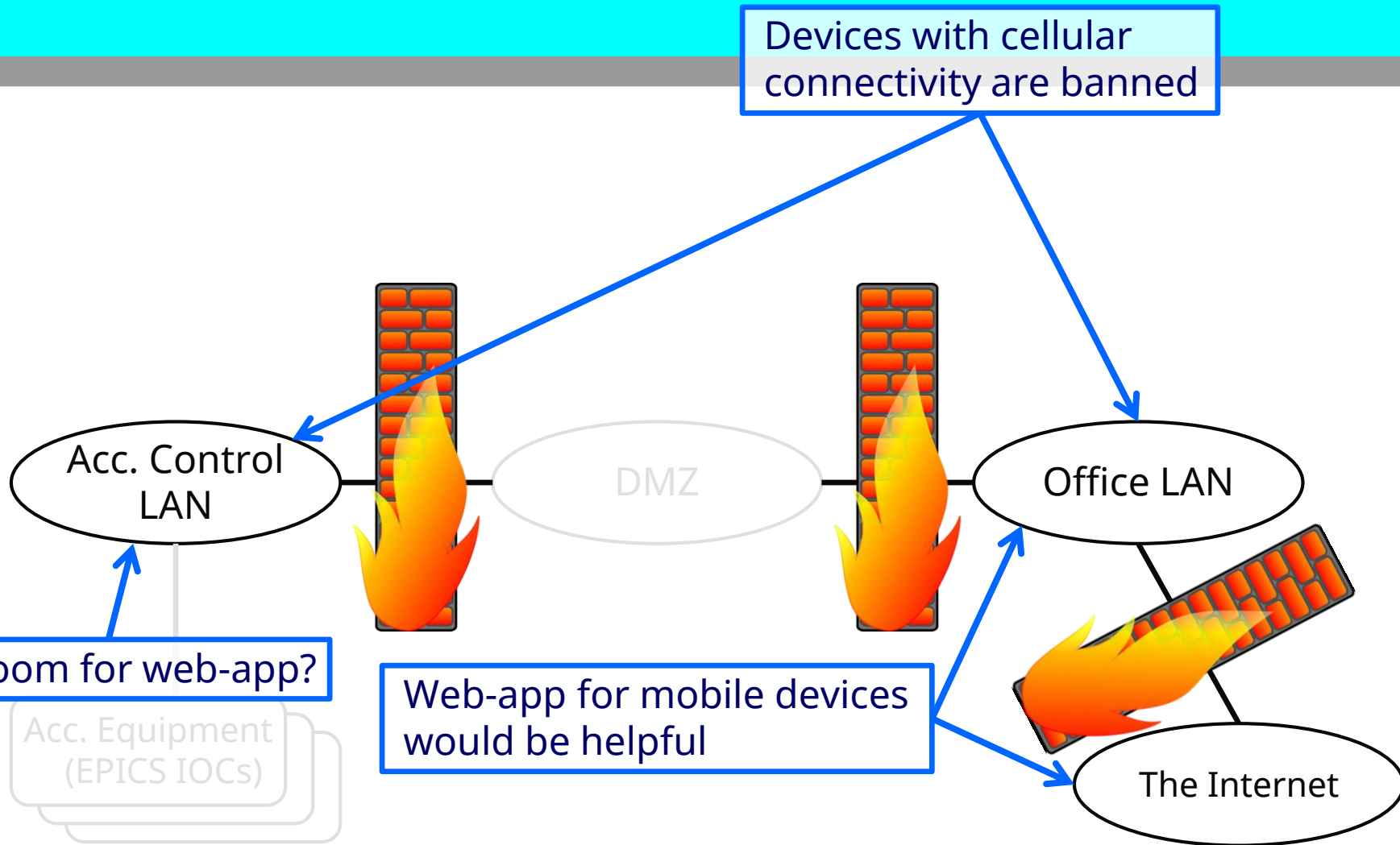
# Network and Policy

Requirements from J-PARC IT section:  
Any operation of accelerator equipment shall be prohibited except from control LAN.

Read-only CA available (since 2018)



# Three Categories of Network



# Web application in J-PARC

- Demand for web applications
  - ✿ Accelerator operation status
  - ✿ Status monitor for equipment
    - Magnet/RF power supplies
    - Coolant temperature and pressure
    - Etc.
  - ✿ Operation is not considered (for the moment)
  - ✿ Httpd receives data via file (at present)
- No active web-app development on top of EPICS
  - ✿ Neither in KEK
  - ✿ Collecting information modestly

# One and Only Web-App

www-cont.j-parc.jp/accutil/mr/BeamDestShot.html

## Accelerator Operation Status

Fri May 31 2019 11:35:53 GMT+0900 (日本標準時)

日付 Date & Time	最新の運転状況 Latest Operation Status	備考 notes
2019-05-29 17:44:59	Status(状況):In Operation for Experiments. ビーム供給中 Description(詳細):MLF: 利用運転中	

**Beam Destinations of Accel. Run 82** 19/05/31 11:35:01  
Ver.2.10a (May.2019)

LI MacroPulse: MLF 200 us, MR 200 us  
LI: 56.8 mA

MR: 2 bch, 438 ns, 32/32

**MR Beam Cycle and Mode**  
MR-A, MR-NoBeam, Acc-mode (graph)  
Shot: kW, ACC Cycles: LI 5200 ms, MR 5200 ms

**MLF Beam Information**  
MLF-BeamOn: 536 kW

**Power Trend (1 hour)** <MLF 800kW/MR 800kW>  
Graph showing power over time (min to max).

**LI**  
LI BD 90deg, LI BD100deg, LI BD 30deg, LI ED 0deg, LI MEBT1, LI LEBT

**RCS**  
3NETD AC, 3NETD DC, RCS HO Dmp, MLF TGT

**MR**  
MR ExtAbt, MR InjDmp, NU, NU(NTGT), HD, HD(K TGT)

# One and Only Web-App

**Accelerator Operation Status**

Fri May 31 2019 11:35:53 GMT+0900 (日本標準時)

日付 Date & Time	Status (状況) Description (詳細)	備考 notes
2019-05-29 17:44:59	MLF: 利用運転中	

Server side : Capture OPI window periodically

- MEDM screen running in VNC
- Save image to file server
- Httpd reads the image on request

Client side : Web browser reads the image file periodically

- Ajax (XMLHttpRequest)

- Identical image to those OPIs in control room
- No chance of operation by any means



# Previous Attempt

is.j-parc.jp/ctrl/jkwww/accsts/li/LinacStatus.html

## J-PARC LINAC Status

status on Thu Apr 25 10:47:11 2019

LEBT:SCT01	60.28mA
MEBT1:SCT01	0.00mA
MEBT1:SCT03A	56.37mA
MEBT1:SCT03B	57.24mA
MEBT1:SCT05	51.01mA
MEBT1:SCT08	50.42mA
DTL1:SCT01	51.37mA
DTL2:SCT01	53.98mA
DTL3:SCT01	54.27mA
S01B:SCT00	49.15mA
S02B:SCT00	51.25mA
S03B:SCT00	52.13mA
S04B:SCT00	51.01mA
S05B:SCT00	4.15mA
S06B:SCT00	48.26mA
S07B:SCT00	0.71mA
S08B:SCT00	50.61mA
S09B:SCT00	51.01mA
S10B:SCT00	53.15mA
S11B:SCT00	48.86mA
S12B:SCT00	50.15mA
S13B:SCT00	49.18mA
S14B:SCT00	48.76mA
S15B:SCT00	53.92mA
ACS03A:SCT00	0.00mA
ACS03B:SCT00	52.03mA
ACS11B:SCT01	0.00mA
L3BT:SCT06	44.60mA
L3BT:SCT12	50.88mA
L3BT:SCT14	0.00mA
BD0:SCT06	0.04mA
BD03:SCT04	0.00mA
BD90:SCT04	-0.15mA
BD100:SCT04	0.12mA
L3BT:SCT45	48.95mA

IS/RFQ section:  
LEBT:SCT01, MEBT1:SCT01~SCT05  
DTL section:DTL1:01~DTL3:SCT01  
SDTL section:S01B:SCT00 - S15B:SCT00  
A0BT section:ACS03A:SCT00 ~ ACS11B:SCT01  
L3BT section:L3BT:SCT06 ~L3BT:SCT14

### LOCATION OF MONITORS (J-PARC LINAC)

Update Graph

This page is powered by [MochiKit](#) and [PlotKit](#) for AJAX like update.

javascript code for this page:(c) N. Yamamoto, KEK, JAPAN, 2006.  
To MS-IE users: You may need to change a chace control setting of your browser, otherwise data will not be updated until you restart IE.

# Previous Attempt

**J-PARC LINAC Status**  
status on Thu Apr 25 10:47:11 2019

**Data flow:**

- Server side : Collect data and write a JSON file
  - PythonCA
- Client side : Read the JSON file and render
  - Ajax (Mochikit + Plotkit), CSS

**Abandoned**

- Developed in 2006
- Not maintained anymore since 2011

IS/RFQ section:  
LEBT: S001: S001 - S001: S001  
DTL section: DTL0: S001: S001 - DTL0: S001: S001  
SDTL section: S01B: S000 - S15B: S000  
A0BT section: ACS03A: S000 ~ ACS11B: S001  
L3BT section: L3BT: S006 ~ L3BT: S014

Update Graph

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To MS-IE users: You may need to change a chace control setting of your browser, otherwise data will not be updated until you restart IE.

# Summary

- There are demand for web application in J-PARC
  - ✿ Strong are the restriction on network policy
  - ✿ Present solution is file-based data transfer
- One web application in service
  - ✿ Might increase variety of captured OPI image, at most 10 – 20 kinds of images?
- Collecting information modestly
  - ✿ Client-side rendering is preferred
  - ✿ Simple and easy way to convert from existing OPI panels?
    - edm, medm, css/boy