Ministry of Land, Infrastructure, Transport and Tourism

JAPAN CIVIL AVIATION BUREAU

Disaster Response in Japan.

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Disaster Response in Japan.

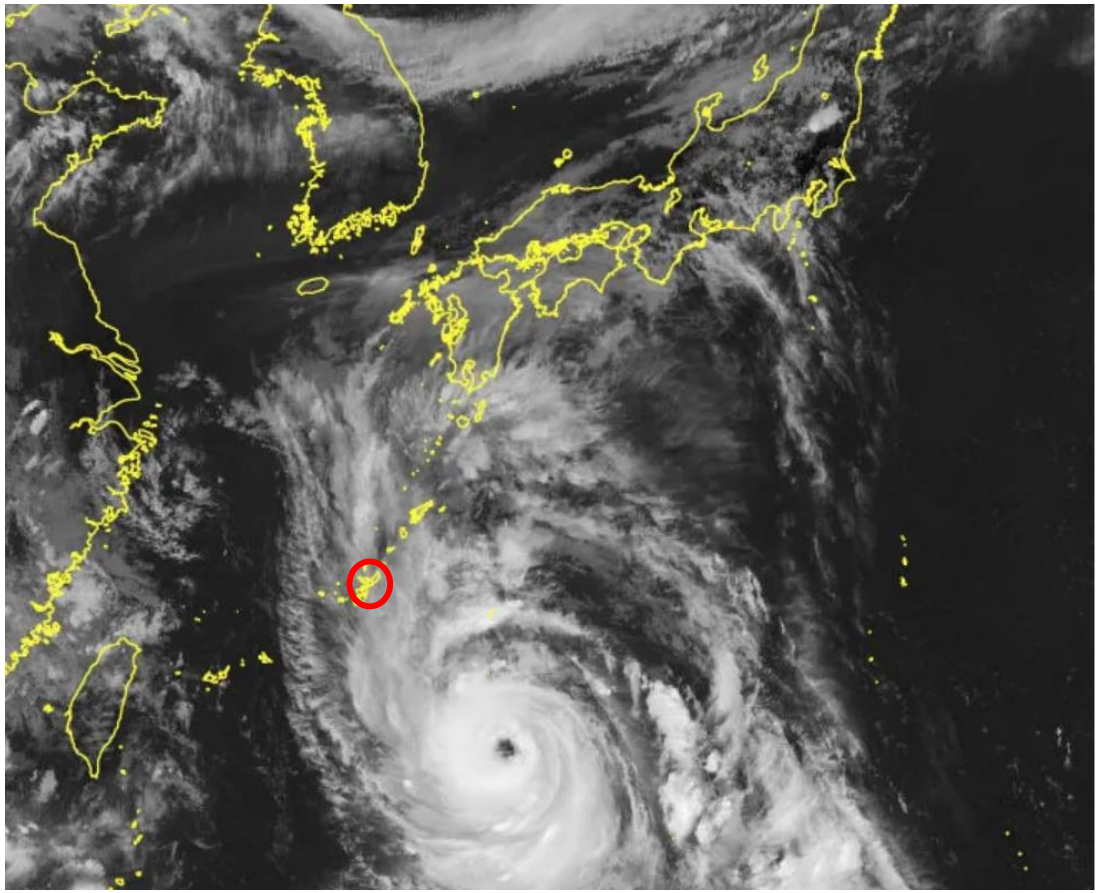
- **Failure of radar facilities cause of typhoons.**
- **Coexisting with volcanoes.**

- **Failure of radar facilities cause of typhoons.**

Coming of Typhoon Khanun

In early August 2023, Typhoon Khanun hit the Okinawa area.

- It brought strong winds and heavy rain.
- Since the typhoon moved very slowly, the terrible weather lasted for a long time.



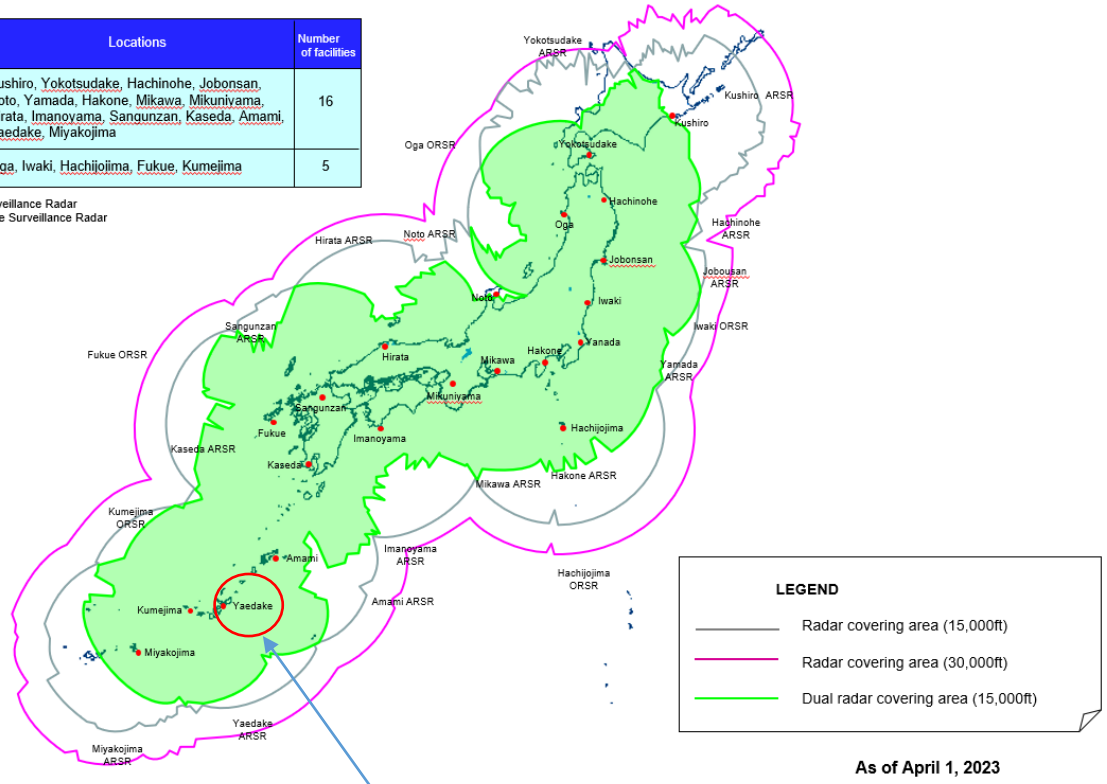
Outage of ARSR and RCAG

Outage of the Yaedake ARSR and RCAG had occurred .

- From 1509 UTC 3rd to 0640UTC 7th August, 2023

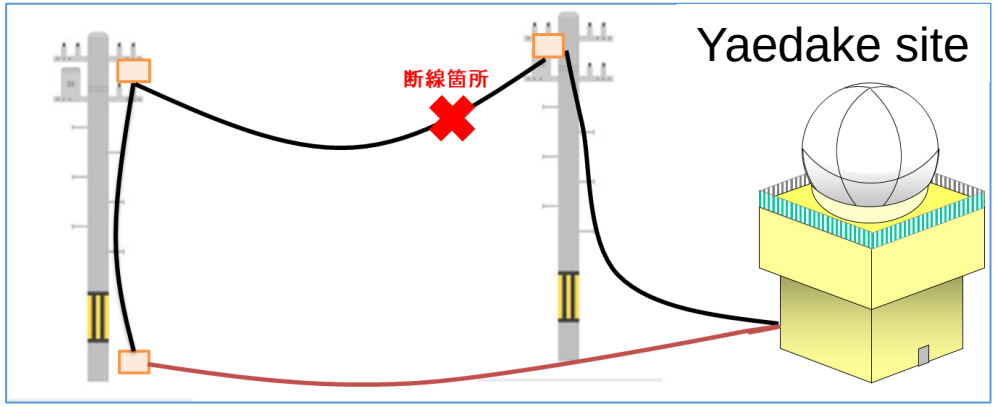
Classifications	Locations	Number of facilities
ARSR	Kushiro, Yokotsudake, Hachinohe, Jobonsan, Noto, Yamada, Hakone, Mikawa, Mikuniyama, Hirata, Imanoyama, Sangunzan, Kaseda, Amami, Yaedake, Miyakojima	16
ORSR	Oga, Iwaki, Hachijojima, Fukue, Kumejima	5

ARSR: Air Route Surveillance Radar
ORSR: Oceanic Route Surveillance Radar



Yaedake site

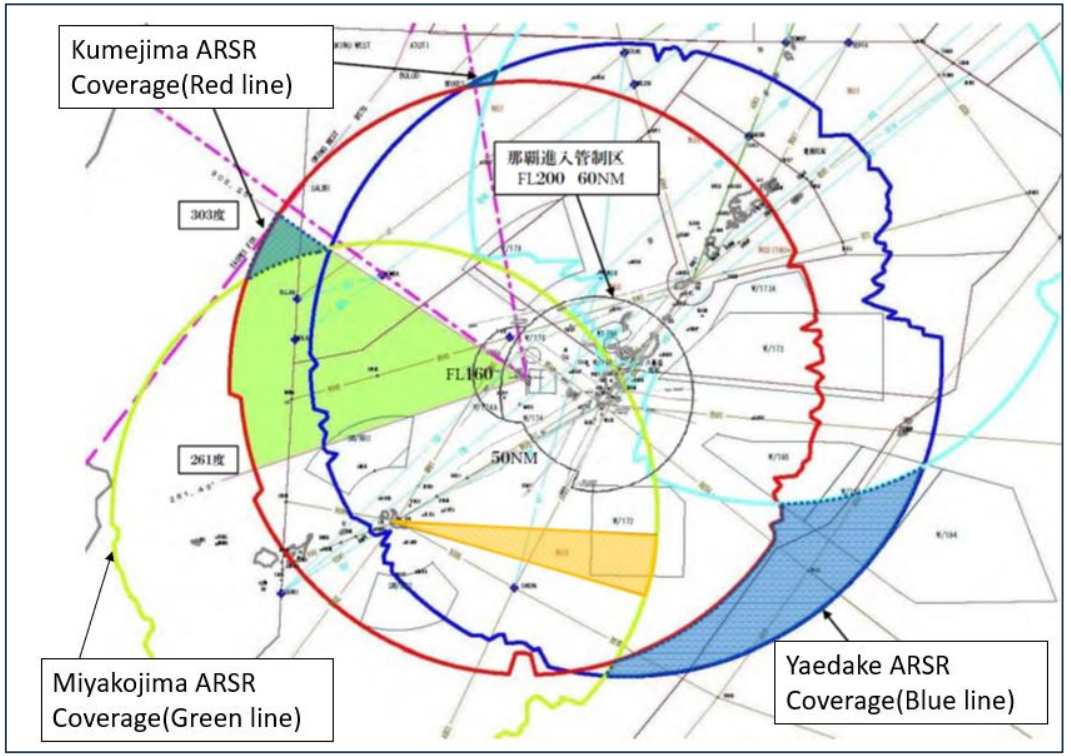
- Network was disconnected from the effects of the typhoon.



- Unable to receive radar information from ARSR.
- Unable to receive/transmit radio communication
- It took time to recover due the strong wind.

ATC's handling

- ATC was able to continue their service as it was supplemented by other sites.
- Blind areas occurred in some areas. RNAV routes in the blind areas could not be used, so some RNAV routes were rerouted.
- ATFM was conducted due to increased traffic for avoiding typhoon.
- Considering the possibility of other ARSR and RCAG outages, the operational measures were considered.
- Shared information of the outages with neighboring FIRs.



AS a result,
there was no serious situation.

The advance preparation for Typhoon

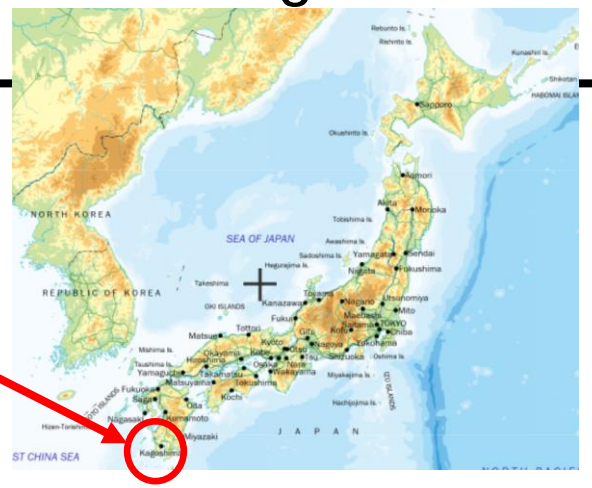
lessons learned (For more prompt action)

- **Early planning of response to issues.**
- **Sharing information with neighboring States in advance.**
- **Establishment of a flame work of communication.**

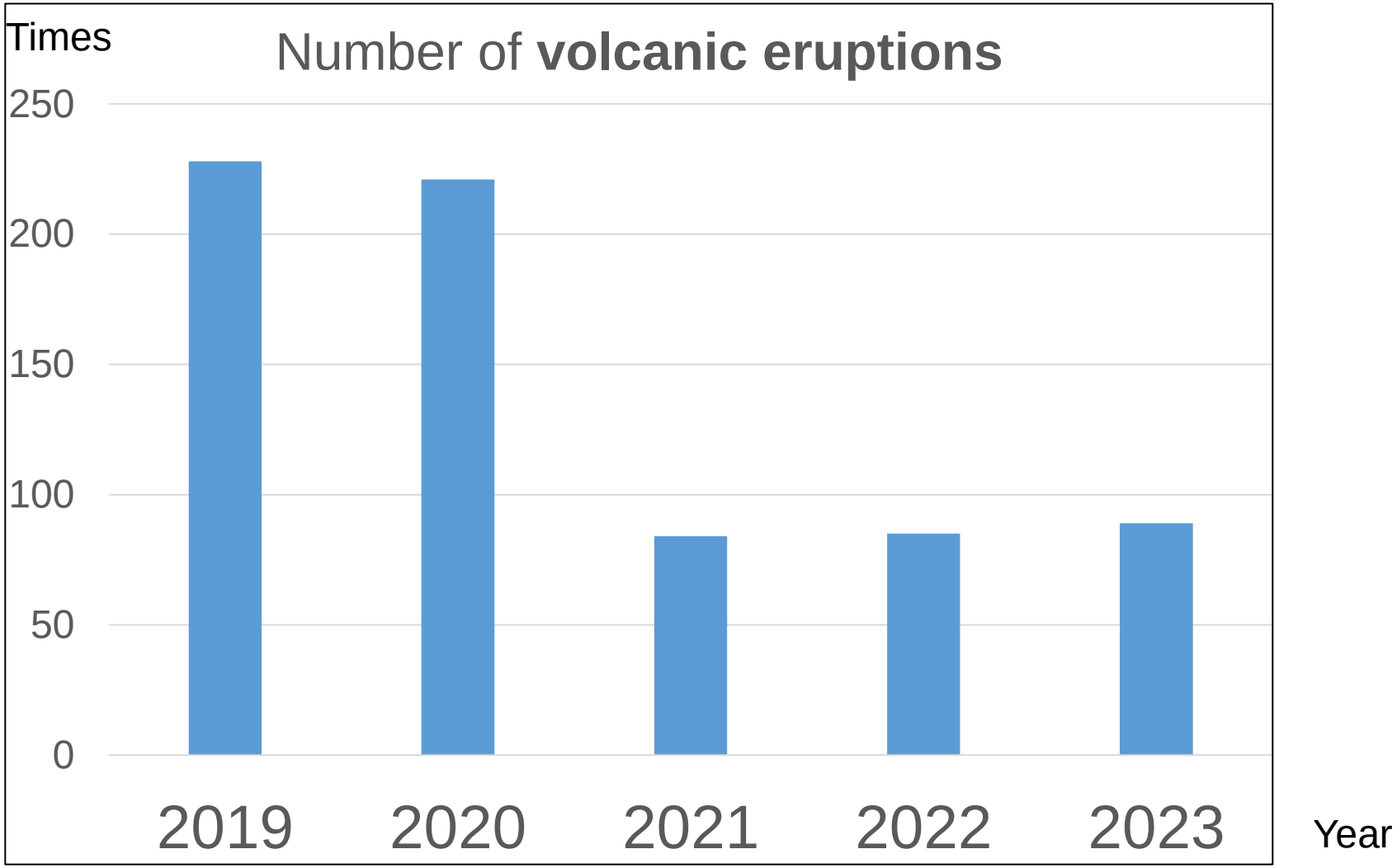
- **Coexisting with volcanoes (Eruption of Sakurajima)**

Location of Kagoshima Airport and volcanoes

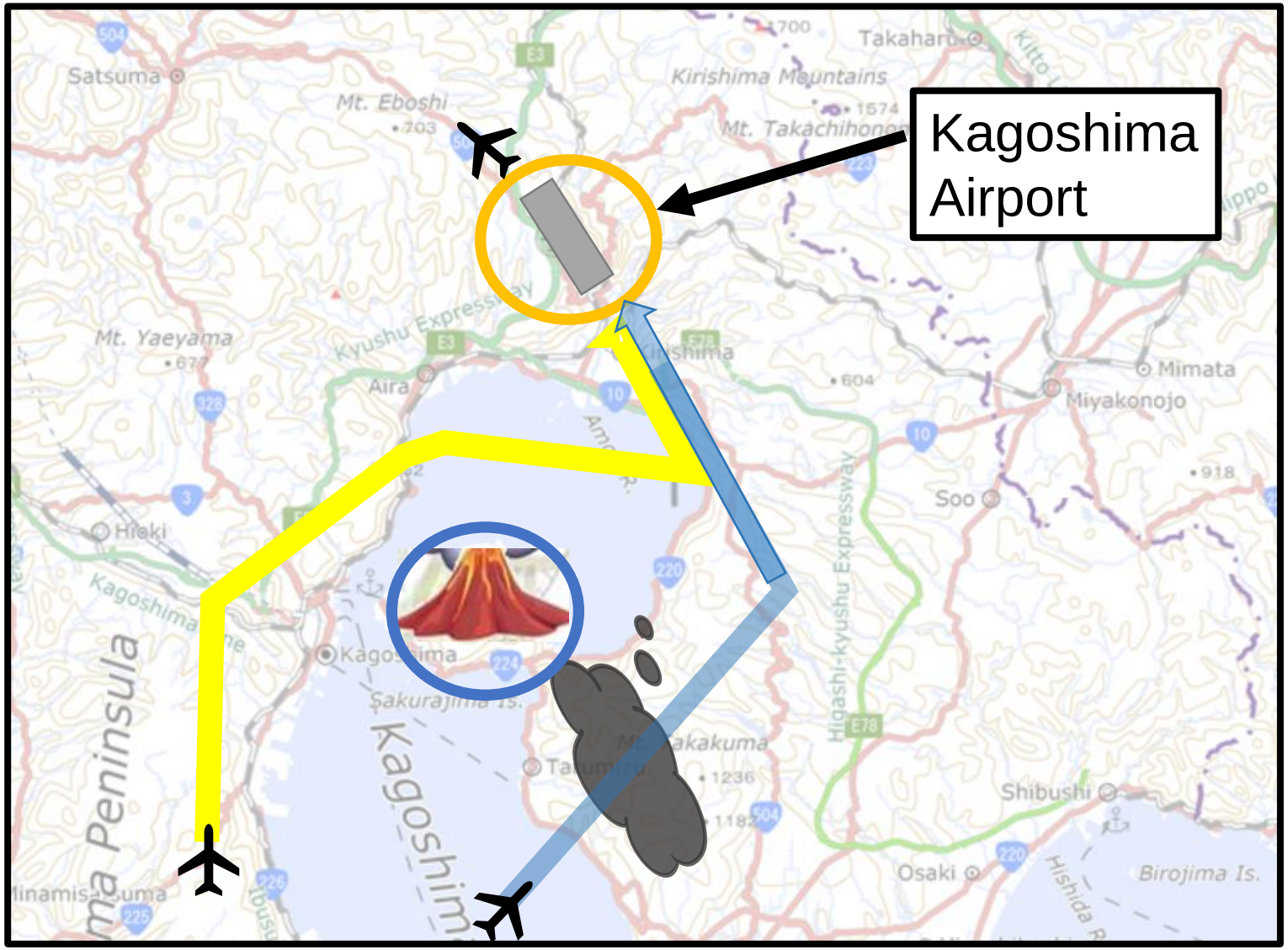
- Sakurajima is composed of two volcanoes.
- The distance between Sakurajima and Kagoshima Airport is approximately 10 miles.
- Eruptions affect aircraft takeoffs and landings.



Number of **volcanic eruptions(Sakurajima)**



Volcanic ash countermeasures



- Studies have been conducted to reduce the impact of volcanic ash on takeoffs and landings.
- Establishment of a route for RWY34 which suffers little influence of volcanic ash. (Published AIP, line yellow)
- When a south wind blows, radar vectors are provided since volcanic ashes flow toward the airport.

Things needed for airports near volcanoes.

- **To consider operational methods based on the assumption that volcanoes exist.**

Conclusion

To ensure the safety and efficient operation of aircraft, it is necessary to...

- **Securing information and taking immediate countermeasures in the event of irregularities**
- **Assuming various situations, it is important to take countermeasures in advance and to cooperate with other States**

Thank you

If you have any questions, please contact harasawa-m03h2@mlit.go.jp