FY2018 2nd Round SINET Wide Area Data Collection Infrastructure Demonstration Testing Application Guidelines

1. Purpose

The National Institute of Informatics (NII) operates the Science Information Network (SINET) as the academic information infrastructure for universities and other institutions across Japan. To support an even broader range of research activities in the future, NII is considering building a wide area data collection infrastructure ("WADCI," hereafter; see Appendix 1: Schematic Diagram) utilizing a mobile network as a new environment for SNET access, and functions as a SINET support.

Through WADCI, researchers at SINET member institutions will be able to attach a SIM card for SINET connection to observation equipment to collect data from the observation equipment, analyze the data in various data processing environments, and feed the findings back into their research in a one-stop process. As part of the demonstration testing, in addition to WADCI, it will be possible to use a data processing environment under academic conditions through the support of private sector business operators. This will allow various activities including environmental measurement, biological observation and disaster prevention monitoring to be implemented easily across a wide area, and is expected to broaden the scope of research activities.

This time NII will conduct the following demonstration testing with aims that include evaluating the performance of WADCI.

2. Accepted Applications and Themes

NII is seeking a wide range of research proposals across various fields to utilize WADCI in locations that have not been able to connect to SINET previously to collect research data, perform joint research with remote locations, conduct IoT-related research and so on. While examples of utilization are given in Appendix 2, do not consider those as limitation, and NII hopes to receive proposals for a wide range of uses.

Also note that NII plans to publish information on the themes and progress of demonstration testing as case studies of utilization on the SINET website and elsewhere to the extent that does not impede the demonstration testing itself.

3. Demonstration Testing Environment to be Provided

(1) A mobile network provided by a private sector mobile carrier will be utilized as a platform, and NII will provide an environment allowing university computing environments and arbitrary cloud environments, etc. to be used, even in locations that cannot be connected with dedicated lines or otherwise.

(2) As WADCI is only provided as a VPN-based communications environment using the SINET VPN service, direct connections cannot be made from the mobile network to the Internet. Additionally, the VPN environments configured on WADCI are provided as closed VPNs for each group participating in the testing.

(3) The SIM card and communications charges required to connect to the mobile network are to be paid by the group participating in the testing. Also note that since bids are being sought with respect to specific prices NII is currently unable to provide information on these costs, but the costs are expected to be less than regular mobile virtual network operator charges.

(4) Make sure that any mobile devices the SIM cards will be inserted into are SIM-unlocked.

4. Application Eligibility

Persons who meet any of the following criteria may apply is the representative of a group wishing to participate in the testing (and may also apply as an individual). Also note that if the group representative is eligible at multiple institutions, they may lodge an application in their capacity at any such institutions.

(1) Researchers, etc. belonging to SINET member institutions

(2) Researchers, etc. belonging to institutions eligible to join SINET

* When (2) applies, the institution should become a member of SINET by the time the demonstration testing commences.

* Institutions eligible to join SINET

(1) Universities, junior colleges, technical colleges, inter-university research institutes

(2) Institutes that cooperate on projects with the National Institute of Informatics

(3) National and public experimental and research institutes, as well as incorporate administrative agencies and special corporations whose purpose is to conduct or support research

(4) Institutions engaged in research, etc. on a joint basis with an institution described in (1) through (3) above

(5) Academic associations, academic research corporations and educational facilities equivalent to universities

(6) Institutions participating in networks for the purpose of research

(7) Any other institution deemed appropriate by the Director General of NII

* Private sector companies and local public entities may also use SINET if they are engaged in research, etc. on a joint basis with a university in accordance with (4) above.

5. Demonstration Testing Implementation Period

Early December, 2018 (Planned) to Tuesday, March 31, 2020

6. Data Processing Environments Available through Support from Cooperating Businesses

Please check the SINET website for a list of available data processing environments. Users (successful applicants) will be able to select a service and enter into a contract with the corresponding business.

https://www.sinet.ad.jp/wadci/

7. How to Submit a Proposal

Enter the required information into the FY2018 SINET Wide Area Data Collection Infrastructure Demonstration Testing Participation Proposal (Template 1) and submit the proposal as electronic data to the email listed under 13. Where to Submit Proposals and Make Inquiries.

8. Deadline for Proposal Submission

Friday, March 29, 2019

* Selection will take place continually. Applicants will be notified of results continually following a selection period of around two weeks from receipt of their application.

9. Selection Procedures and Notification of Selection Results

The selection of groups to participate in the testing will be conducted by the NII Research and Development Center for Academic Networks by screening documentation, conducting interviews, and so on. Note that the proposal representative will be informed of the selection results about two weeks after receipt of the proposal.

10. Matters to Observe During Demonstration Testing
(1) Groups participating in the testing shall only use the WADCI for the purpose of the demonstration testing. In addition, the group participating in the testing shall be responsible for implementing any security measures and responding to incidents when using the WADCI.
(2) If NII determines that the use of the WADCI is inappropriate, it may suspend or terminate a group's use of the WADCI.
(3) When SINET services other than the WADCI (VPN, etc.) are used in connection with implementing the demonstration testing, a separate application will need to be submitted for the service in question in accordance with the SINET Network Service Guidelines.

11. Progress Reports, etc.
   An interim report on demonstration testing is to be submitted in July 2019 (timing may change depending on the start of demonstration testing), with a report on findings to be submitted in April 2020. For both reports, prepare the FY2018 SINET Wide Area Data Collection Infrastructure Demonstration Testing Progress Report (with the matters indicated in Template 2 entered) and email the report as electronic data to the email listed under 13. Where to Submit Proposals and Make Inquiries.

12. Overall Flow
   - Group to participate in testing → NII: Submission of participation proposal (by March 29, 2019)
   - NII → group to participate in testing: Notification of Selection Results (as available)
                              * Selection will take place continually. Applicants will be notified of
                                results continually following a selection period of around two
                                weeks from receipt of their application.
   - Group to participate in testing: (1) development of testing environment (including insertion of SIM card(s), SINET usage application, etc.)
                              (2) Implementation of the demonstration testing (Early December 2018 [planned] to March 31, 2020)
   - Group to participate in testing → NII: Submission of interim report (planned for around July 2019)
   - Group to participate in testing → NII: Submission of progress report (by April 30, 2020)
   * NII will inform the proposal representative of detailed procedures as needed following notification of selection results.

13. Q&A
   Q. In addition to outgoing communications from an IoT device to the data processing environment, etc., are incoming communications for controlling an IoT device and communications between different IoT devices possible?
   A. Yes, this is possible. WADCI using the SINET VPN service and is designed to be used over a closed VPN within the group participating in the testing. Any communications can be performed within that VPN.
   Q. How many SIM cards can be used?
   A. There is no particular limit on the number of SIM cards that can be used. Please note the number of required SIM cards in the participation proposal.
      Also note that the fee for SIM cards will be charged. Please purchase the SIM cards from
                              a communications operator designated by NII.

inet.ad.jp/wadci/In the future, frequently asked questions will be continually posted and updated on the SINET website. https://www.sinet.ad.jp/wadci/

14. Where to Submit Proposals and Make Inquiries.

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