



भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
विद्युत संचार विकास प्रभाग
Power Communication Development Division

Subject: - To explore the possibilities of indigenous development of SCADA software for power system management – Gist of Discussions of Meeting.

The gist of discussions of third e-meeting of the team constituted by MoP “to explore the possibilities of indigenous development of SCADA software for power system management” conducted by the Central Electricity Authority via Webex online platform on 13th August, 2021 is enclosed herewith for kind information and necessary action by all concerned.

Encls.: As above.

Signature Not Verified
Digitally signed by UPENDRA
KUMAR
Date: 2021.08.19 16:35:41 IST

Chief Engineer
& Convener

To,
All Members of the Team

Copy for kind information to: -
The Chairman of the Team & Member (Power System), CEA

Meeting of the Team**“To explore the possibilities of indigenous development of SCADA software for power system management”****Gist of Discussions of 3rd Meeting**

Meeting Number:	3 rd Meeting
Meeting date & time:	13 th August, 2021 at 11:00 Hrs
Mode:	Online meeting
Team Chair:	Shri Goutam Roy, Member (Power System), CEA
Convener:	Shri Upendra Kumar, Chief Engineer, PCD Division, CEA
Members of the Team:	Enclosed at Annexure – I
List of participants:	Enclosed at Annexure – II

Convener of the Team welcomed Shri Goutam Roy, Member (Power System), CEA & Chairman of the Team to the meeting and extended a cordial welcome to all the participants.

Then the Convener apprised the participants about the status of actions taken on the decisions of the second meeting of the Team on part of the Members.

Regarding, **furnishing of analysis & recommendations on capability, preparedness, feasibility and challenges in indigenous development of SCADA/EMS/DMS software**, he informed the Team that inputs have been received from POWERGRID, POSOCO and APSLDC only. He requested other members to furnish their inputs at the earliest so that the same can appropriately be incorporated in the draft report. He further apprised the Team that CEA has prepared a draft report based on the data/other inputs available with it and the same has been shared with the Team Members for their comments/modifications/suggestions. However, inputs on shared draft report have been received from POWERGRID, POSOCO and APSLDC only. He stated that this meeting has been called to discuss the received inputs and finalize the draft report and requested the Members to provide their inputs during the meeting.

The Convener of the Team then presented the comments received from POWERGRID, POSOCO and APSLDC on the draft report.

Regarding comment from POWERGRID on requirement of examination of documentary evidence for the projects executed by identified Indian developers to assess their capabilities, Chief Engineer (PCD Division), CEA & Convener of the Team informed that the Indian developers have been identified based on the inputs from power utilities, details of which have already been shared with the Team. The Chairman of the Team stated that Indian power sector is a complex system and Indian vendors may not have experience of handling such a large system. Representative from POWERGRID explained that documentary evidences are required for bidding process as well. When framing the bidding qualification criteria, experience of vendors need to be accounted for. POWERGRID also stated that the identified

vendors may have experience of Substation Automation, but their expertise in control center applications is limited. The Convener of the Team suggested that these documentary evidences are required for bidding process and should not be a part of this report. The Chairman of the Team suggested that views of developers should be taken on how they are going to handle the complex applications for grid operations and other integration issues. Representative from POSOCO stated that vendors may be asked to give a detailed plan on how they are going to implement this project with proper timelines and how they will resolve integration issues. The Chairman of the Team invited views from C-DAC as a developer. Representative from C-DAC explained that they have the capability to develop the complete software and they can provide a detailed plan for the same. He also explained that interoperability and integration issues among different vendors' products can be resolved by adopting common standards and by chalking out a structured integration plan between the vendors.

Regarding point about collectively viewing the modules of different vendors, POSOCO stated that we have to decide whether the objective is to develop multiple vendors to increase competition or to develop SCADA software by forming a consortium of Indian vendors. There may be many challenges in consortium like commercial, administrative etc. in addition to technical issues like integration of modules on real time basis. He also stated that development of SCADA software should be done in consultation with the users and vendors may be asked to give demonstration of developed modules. Representative from POWERGRID submitted that vendors, while giving inputs on different listed modules, may not have gone through the detailed specifications and therefore may not be aware of the detailed requirements of modules. Chairman of the Team suggested to have another meeting with the developers to discuss the apprehensions raised by the Members of the Team.

Regarding the issue of timeframe of 36 months for complete SCADA software development by individual developer, POSOCO commented that in addition to development, time taken for testing and bug fixing may also be incorporated and suggested that timeframe should be modified as 48 months with testing. The Chairman of the Team expressed his concern that 48 months may be a long duration for development.

Regarding point about shorter timeframe for development in case of consortiums, POSOCO and POWERGRID raised concerns about integration issues among different vendors' products/modules. The Convener of the Team stated that presently also some of the applications are provided by third party and integration is done with the main SCADA/EMS application. POWERGRID replied that only those applications which do not impact real time database like LDMS, IMM, Patch Management Software etc. are taken as third party applications. POSOCO stated that in case of different database access by different vendors' applications, there may be issues of data mismatch, data mapping and data flow. POWERGRID and POSOCO suggested that these issues need to be resolved while forming consortiums.

Regarding challenges raised by developers about qualification criteria in bidding process, POWERGRID explained that the qualification criteria is not drafted to prohibit indian vendors intentionally, rather Indian vendors' experience does not match the requirement of Standard Technical Specification in terms of size and complexity of the grid. The Chairman of the Team suggested that some relaxations like experience criteria can be given but there should be no compromise on technical requirements. Chief Engineer (DP&T Division), CEA stated that if criteria for experience and financial qualification are not relaxed, then there will be no

promotion for Indian vendors. The Convener of the Team suggested that a model document for bidding and specifications can be prepared for this purpose.

Regarding funding issue, Chief Engineer (DP&T Division), CEA suggested that certain schemes like NSGM etc. can be roped in for funding support for pilot projects.

Chairman of the Team once again invited Members to share their overall views and observation on the subject.

POWERGRID representative stated that major challenge for Indian developers is competing with the established global OEMs working in SCADA industry. Despite development of the product, their prices may not be competitive enough and therefore expenditure on R&D activities may not be justified for Indian developers. Funding support is another big challenge for Indian developers, he added. Chairman of the Team replied that Indian companies are known worldwide for their economic products and given an opportunity and proper grooming, they will certainly be able to capture global markets. POWERGRID agreed with this view.

POSOCO representative appreciated the spirit of discussion in the meeting and expressed that certain points need to be considered. He stated that Indian developers, though willing to develop SCADA software for Power System Management, may not be having domain knowledge of Power System. For example, he proceeded, that certain identified developers have expertise in communication technologies and not in SCADA domain. In this scenario, it is important to address what are their vision as in whether they will be developing SCADA software afresh or will they be collaborating with other developers and sharing their available modules. This leads to another important issue of integration and interoperability. There must be proper structured integration plan and design to avoid these issues. Lastly, he appreciated the point raised by Chief Engineer (DP&T Division), CEA about providing funding assistance and nurturing Indian developers. Chairman of the Team also lauded the views of Chief Engineer (DP&T Division) and urged other Members also to explore programs and schemes that can be utilized for providing funding support to Indian developers in this project.

Representative from APSLDC agreed with the views raised by other Members and suggested that premier research institutes may also be roped in for R&D activities. Chairman of the Team suggested that as many identified developers have already presented that they have collaborations with certain institutes, this aspect may better be left to developers. APSLDC agreed with this view.

Representative from MSETCL stated that accessibility for customization may be ensured while developing indigenous SCADA software. This will reduce dependence of utilities on OEMs for small configuration and customization issues.

CDAC representative stated that concerns raised by POWERGRID and POSOCO about interoperability of critical SCADA applications can be resolved by ensuring proper standards are followed while creating interfaces. This will ensure multi-vendor modules operating seamlessly on the same platform. He also added that standards, wherever missing, need to be decided and put in place. Regarding concern raised by POSOCO over domain knowledge of Power System not present among Indian vendors, he stated that CDAC is having tie-ups with

IITs, which are having domain knowledge of electrical systems, through NamPET program and SCADA software developed by CDAC will certainly be able to compete in global market. Regarding apprehensions raised about Indian vendors not having experience of handling large-scale systems and managing considerable data size, he replied that CDAC is having Supercomputer infrastructure and is having experience of managing Exascale data storage, Big data etc. He added that they are already having a Historian solution and same can be extended to handle data at Regional and National level. He concluded that idea of executing a pilot project through Indian vendors is a welcome step and CDAC is looking forward to it.

The Convener of the Team presented a modified draft based on the inputs provided by Members. The Chairman of the Team suggested to circulate the modified draft among the Team and requested the Members to share their views within 2-3 days. He also suggested that comments of Members may be shared with identified developers and their views on resolution of apprehensions may be taken. He suggested to call a meeting of the Team with identified vendors for detailed discussion on the apprehensions raised by Members like integration issues, experience of vendors, timeline for complete development etc.

CONCLUSIONS

Concluding the deliberations of the meeting, following was decided:

- CEA will share the modified draft report incorporating Members' comments suitably.
- Team Members will furnish their inputs on the draft report shared by CEA within 2-3 days for inclusion in the draft report appropriately.
- CEA will share comments and issues raised by Members with identified developers and collect their views.
- A meeting will be called between Team members and identified developers to deliberate on the issues raised.

Members/Participants List

S. No.	Committee Composition	
1	Shri Goutam Roy, Member (PS),CEA	Chairman
2	Shri Vivek Goel, Chief Engineer (DP&T), CEA	Member
3	Shri Upendra Kumar, Chief Engineer (PCD)	Convener
4	Shri Debashis Bose, Deputy Secretary, MoP	Member
5	Shri A K V Bhaskar, Chief Engineer,APSLDC	Member
6	Shri H M Patel, I/c General Manager (IT),GUVNL	Member
7	Shri Shrikant Sadashiv Rajurkar, ED (Trans),MSETCL	Member
8	Shri. Sunil Agrawal, ED, PGCIL	Member
9	Shri Debasis De, ED,POSOCO	Member
	Shri Devendra Kumar, Chief General Manager ,POSOCO (Alternate Member)	
10	Shri Renji Chacko, Senior Director & Head, Power Electronics Group, C-DAC	Member