Proposal No. 23
(Proposal details for the R&D scheme of USOF)

Subject: For collaborative development of CBC-RAN Interworking Function for Cell Broadcast Centre (CBC) Integration in TSP Networks

Introduction

In disaster management domain, disaster alert dissemination through cell broadcast is an effective mechanism for reaching large number of people in a short time. This is especially useful for disaster with less lead time such as earthquake, Tsunami, Gas leak etc. Cell Broadcast implementation can be achieved by integrating 3GPP defined Cell Broadcast Centre (CBC) entity with the respective Core and RAN network of the Telecom Service Providers in India. The required RAN interworking solution will bridge the gap between 3GPP compliant CBC solution of C-DOT (the T&D wing of DOT) and proprietary interfaces of Core and RAN deployed across the country.

DOT invites participation from the Indian start-ups/ organizations/ research and academic Institutions for this collaborative project, for development of for CBC-RAN Interworking Function for Nokia 2G RAN and Alcatel 2G RAN, which will be developed in collaboration with CDOT. The potential participants should have domain expertise in 3GPP protocols, telecom network architecture, cellular radio access related technologies. The interworking function for Nokia 2G RAN and Alcatel 2G RAN is mandatory.

The potential participants should have demonstrable expertise in optical communication related technologies in the form of fully or partially prototyped optical technologies, including but not limited to, components/ modules / hardware / software / subsystems or end products thereof. The final outcome of the collaborative development project shall be working solution, which can be integrated in existing product/solution C-DOT CBC already developed.

Technical Specification:

The RAN interworking solution shall interface with Nokia 2G RAN and Alcatel 2G RAN on one side and with 3GPP compliant C-DOT CBC solution on the other side. The solution must follow the bellow mentioned specifications:

S. No.	Requirement	Description
1	Northbound interface	The interworking solution shall provide northbound interface compatible with 3GPP based C-DOT CBC. It shall have capability of receiving CB requests encoded as per 3GPP protocol of CBC.
2	Southbound interface for Nokia 2G BSC	The interworking solution shall provide southbound interface compatible with Nokia 2G BSC. It shall have capability to receive CB request/response as per proprietary protocol of Nokia 2G BSC.
3	Southbound interface for Alcatel 2G BSC	The interworking solution shall provide southbound interface compatible with Alcatel 2G BSC. It shall have capability to receive CB request/response as per proprietary protocol of Alcatel 2G BSC.

4	Interface interconversion	Interworking solution shall provide interconversion between northbound and southbound interface and protocols.
5	3GPP Release Support	The interworking solution shall be compatible to all 3GPP release version and shall support all the new releases in the future.
6	Processing Time	Not more than 1 second per request
7	Concurrent Request Handling	Support for multiple concurrent requests
8	Coordination with OEMs	The solution Partner will coordinate with TSP, Nokia and Alcatel for ensuring development of compatible interfaces
9	Field testing with RAN	The interworking solution will be field tested with Nokia 2G BSC and Alcatel 2G BSC at multiple sites and confirm correct interconversion of all cell broadcasts command request/response. Correct reception of CB messages on handsets shall also be confirmed.
10	End-to-end field testing	The interworking solution shall be tested end-to-end using C-DOT CBC solution and RAN of respective TSPs.
11	Scalability	The interworking solution shall be scalable to any number of BSCs as per the size of the TSP network.
12	Log Management	The interworking solution shall save and maintain all transaction logs and event logs. Alarms, reports and statistics shall also be maintained.
13	Configuration Management	The interworking solution shall provide the provision of configuring various parameters of the interworking solution via a configuration management module. A graphical user interface for the same shall be preferred.
14	Security Management	The interworking solution shall take care of all security measures. The security compliance report shall be provided.
15	Reliability	The proposed service shall provide highly reliable service and have adequate redundancy mechanisms to ensure minimal downtime and QoS of around 99.5%.
16	Documentation	Proper documentation to be provided for integration with CBC and RAN.

Format of Response
Companies / organizations / institutions / individuals developing enabling technologies / modules / components / subsystems / products are required to respond in the format provided in Annexure-A, on the DOT website (link address provided- refer "format of response")