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Government of India
Ministry of Communications and Information Technology
Department of Electronics and Information Technology
(IPHW Division)

Minutes of Pre-Bid Meeting regarding EOI for "Development of Indian Conditional Access System (CAS)" held under the Chairmanship of Dr. Ajay Kumar, Joint Secretary, on Feb 11, 2013 at DeitY, Electronics Niketan, New Delhi

List of participants is placed at **Annexure 1.**

Dr. Ajay Kumar, Joint Secretary, DeitY welcomed the participants to the meeting and appreciated the response that agencies have shown for the Pre-bid meeting for EoI for "Development of Indian Conditional Access System (CAS)". Objective of this Pre-Bid Meeting is to resolve queries of the prospective bidders to whom RFP will be issued after analysing response from Expression of Interest.

Queries as shared with DeitY were discussed one by one in order to understand bidders' point of view and other issues related to "Development of Indian Conditional Access System (CAS)". Floor was open for discussion and participants discussed their queries with the Evaluation Committee members. These queries were debated and discussed. Queries and Response arrived at by the Evaluation Committee are placed at **Annexure 2**. Some of the queries and comments received after the meeting will be considered and evaluated at the RFP stage.

Representatives of Centre for Development of Telematics (C-DOT) initially mentioned that they also wish to be associated with this project. In this regard, Dr. Ajay Kumar held a meeting with the representatives of C-DOT and C-DAC on March 1, 2013 and the Executive Director, C-DOT vide subsequent letter dated March 6, 2013 conveyed that under the Multiplier Grants Scheme of DeitY, it would be convenient and fruitful if one Government organization works with industry consortia. It would also facilitate the smooth co-ordination for the project. As C-DAC is involved in this project from the beginning, and C-DAC also has the requisite expertise, C-DOT would like C-DAC to be Government Agency for this project.

Thus, Centre for Development of Advanced Computing (C-DAC) has been identified as the Government R&D institution for the purpose of this EOI. Bidders are advised to contact Mr. Sourish Behera, Principal Technical Officer, C-DAC, B-30, Institutional Area, Sector 62, Noida, (UP) Ph 0120-3063348, for detailing on this.

Meeting ended with thanks to the Chair.

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Annexure 1

List of participants

1. Dr. Ajay Kumar, Joint Secretary, DeitY…….. in Chair
2. Dr. DebashisDutta, GC (R&D in Electronics), DeitY
3. Dr. B. K. Murthy, Executive Director, C-DAC, Noida
4. Sh. S K Marwaha, Additional Director, DeitY
5. Sh. Sourish Behera, Principal Technical Officer, C-DAC, Noida
6. Sh. Ankan Biswas, Chairman, Digital Broadcaster Council, CEAMA
7. Sh. Akhilesh Saurikhia, Consultant, C&BB
8. Sh. Manish Vashistha, Consultant DeitY
9. Sh. Tanay Krishna, Head-Marketing, C-DOT, C-DOT Campus
10. Sh. Aman Singhania, SRE-Marketing, C-DOT, New Delhi
11. Sh. Vikash Dwivedi, Senior Research Engineering, C-DOT, New Delhi
12. Sh. Alok Kumar, General Manager, Swape Broadcasters Pvt. Ltd.
13. Sh. Subodh Bali, AGM Marketing, Essel Shyam Comm. Ltd.
14. Sh. Nagaraj Kattari, Director, iGate Global Solution Ltd.
15. Sh. Parmod Deval, Director Sales, iGate Global Solution Ltd.
16. Sh. Bavinder Singh Sethi, Chief Strategy Officer, GEEPL, Noida
17. Sh. Asif Khan, Director, Indeon Technologies Pvt. Ltd., Pune
18. Sh. A.K. Bhowal, Webel Mediatronics Ltd.
19. Sh. S.J. Dutta, Webel Mediatronics Ltd.
20. Sh. RohitVenugopal, Pre Sales, Latens, Bangalore
21. Sh. Amol Sharma, Regional Sales Manager, Latens , Bangalore
22. Sh. S.K. Sharma, Senior Consultant, MCBS, Ghandhi Nagar, Gujrat
23. Sh. Rishi Verma, ABV Singapore
24. Sh. P.J. Abraham, KELTRON, New Delhi
25. Sh. Taral Parikh, Solution Expert, Nagra, Mumbai
26. Mr. P. K. Agarwal, Chief Manager, ITI. Ltd.
27. Sh. Sandeep Kumar, AGM-Marketing, ITI Ltd.
28. Sh. Rajiv Kumar, Sr. Executive, TATA ELXSI Ltd., Okhla

Annexure 2

EOI for Development of Indian Conditional Access System (CAS) and DeitY's Response

S. No.	**Query**	**Response**
1.	As mentioned in the document, the CAS price shall be USD 0.5 / STB. Is it fixed or the bidder can quote on its own?	Licence fee of ≤ USD 0.5 per device/ STB is the fixed cost.
2.	Is it expected that USD 0.5 /STB including smart card or excluding?	Including Smart card
3.	Can bidder also quote for STB and head end along with CAS?	Not required
4.	**(Please refer Page 10 of 29, Point 1.4)** **1.1: (Refer Fourth Line - Out of 73 million cable subscribers, only 5 million are on digitized platform and rest of 68 million on analog system)** According to the 'Cable Television Networks Act 1995' to provide a "Digital Addressable System - DAS", would it include the entire market size of 73 million TV Homes of Cable Service Dependents OR the 68 million TV Homes, which are still on the analog system.	Only for those TVs which are still on analog system
5.	**1.2: (Refer Last Line - LCOs do not have headends and about 6,000 headends need to be digitized),** Please explain as it says about 60,000 LCOs OR 6000 headends of ICO out of 7,000 and if it says 60,000 LCOs, Does it include providing complete set-up of headends comprising digitization OR ELSE IF it says 6,000 headends of ICO for incorporating only digitization.	This EOI is limited to development and implementation of the CAS system (to be incorporated at the STB and head-end systems), as detailed in the EOI. Related issues will have to be improvised by the bidder.
6.	**2. (Please refer page 12 of 29, Point 4)** **(Refer Sub-Point 1- Approach Paper for Expression of Interest (up to 5 A4 pages)** Would there be a standardized format for "Approach Paper" and be provided by DeitY OR it could be of any customized format, If YES, would it cover Vision, Mission, Development Plan, Project Plan Overview, Project Components, Target Group, Market Potential for the Proposed Solution, Estimated Cost, Probable Revenue etc.	Approach Paper should be a short and concise preamble of the bid containing inter-alia: 1. Brief description of the proposed model of CAS 2. Time schedule for development and implementation of CAS, mentioning milestones to be achieved 3. A Brief history of the bidder/ consortium a. This part should not contain vision and mission statements but factual narrative b. In case of consortium, bidder should indicate when the consortium has been formed and for what purpose. In case the consortium has been formed for bidding in EOI, the organization structure and future business structure of the consortium with respect to this project should be clarified. 4. Capability of the bidder a. Cryptographic capability b. Software development capability c. Hardware integration capability for

		embedded software 5. Experience of the bidder a. Experience with Cryptographic implementation b. Experience with cable TV transmission eco system 6. Resolution of 'Conflict of Interest' regarding CAS business in India a. In case the bidder is currently a stake holder in broadcast ecosystem, its involvement must be unequivocally explained b. In case the bidder is a CA vender itself or one of the consortium member is a CA vendor, bidder must establish resolution of "conflict of interest" for the total business c. In case the bidder is a operator itself or one of the consortium member is an operator, bidder must establish resolution of "conflict of interest" in the business d. In case the bidder is a Set Top Box vendor itself or one of the consortium member is a Set Top Box vendor, bidder must establish resolution of "conflict of interest" in the business
7.	**3. (Please refer page 13 of 29, Point 5)** **3.1 (Refer Sub-Point (iii), First Line - The CAS should be available at USD 0.5 per device/STB for all manufacturers in India for a period of three years),** Would USD 0.5 per device/STB for all manufacturers in India for a period of three years be treated as a part of Fixed Operational Cost OR a part of Variable Operational Cost depending upon the exact end users of Set Top Box.	Licence fee of ≤ USD 0.5 per device/ STB is the Fixed cost.
8.	**3.2 (Refer Sub-Point (iii), Second Line - During the period the developer will be free to license the CAS to manufacturers outside the country without restriction),** Does it say about Foreign Manufacturers of Set Top Box and Licensing without restriction as per Developer's desired price in USD.	Price for Foreign Manufacturers should not be less than the minimum price at which it is offered to STB manufacturers in India.
9.	**4. (Please refer page 16 of 29, Point 7)** **(Refer Sub-Point (iii) b. - Integrate CAS for at least 5 operators covering at least 250,000 end users)** Does it say for integrating 5 'Multi System Operators (MSOs) OR 5 Independent Cable Operators (ICOs) OR 5 Local Cable Operators (LCOs) with at least 250,000 end users OR ELSE IF it says for integrating 5 Operators comprising any Combination of MSOs, ICOs and LCOs with required at least 250,000 end users.	At least 5 operators covering at least 2,50,000 end users in any combination.
10.	Page 12 of 29- Checklist- Approach Paper: Can you please provide the points which are to be	Please see response to Query at S. No. 6 above.

	covered in the approach paper document - in order to ensure uniformity and consistency across the vendors.	
11.	What will be the nature of the contractual agreement resulting from the award of the RFP to the successful bidder? For example, will it cover technology transfer and/or joint development of the Indian CAS and/or supply and support of the resulting Indian CAS to operators?	To be detailed at the RFP Stage
12.	Who will own the IPR of the Indian CAS? Will it be the government R&D institution or will it be the successful bidder or will it be shared?	Refer para 7 (iii) of EoI
13.	Who will be selling the Indian CAS licenses to the operators (legal and commercial contract)?	The Bidder
14.	Who will be responsible for continuous development of features, upgrades and updates?	The Bidder
15.	Who will be responsible for support (including 24/7) of Indian CAS systems deployed inside operators' networks?	The Bidder
16.	Who will be responsible for maintaining the security of the Indian CAS and for resolving potential security compromises in the future?	The Bidder needs to elaborate this in the Approach Paper.
17.	What will be the scope of security liabilities?	To be detailed at the RFP Stage
18.	Who will be legally and commercially responsible for such security liabilities?	To be detailed at the RFP Stage
19.	With respect to above questions, will the legal entity be an Indian government agency or the participating vendor or a JV between the government agency and the vendor or some other entity?	To be detailed at the RFP Stage
20.	Although the EOI has specified $0.5 per Indian CAS license for the first 3 years, there is no mention of the headend costs (hardware and software licenses). Please clarify whether the $0.5 excludes the headend costs.	It include only software costs and does not include any headend hardware related costs . The bidder must elaborate headend hardware costs in the bid.
21.	Does the $0.5 per Indian CAS license specified in the EOI include the cost of the smartcard?	Yes
22.	How will the Indian government support the successful bidder to ensure that 5 operators adopt the Indian CAS with at least 250,000 end users and that the minimum required 10% market share of CAS is met?	Bidders are expected to meet this condition
23.	What will be the specific roles of Indian premier academic and government R&D institution mentioned in the EOI?	Centre for Development of Advanced Computing (C-DAC) has been identified as the Government R&D institution for the purpose of this EOI. Bidders are advised to contact Mr. Sourish Behera, Principal Technical Officer, C-DAC, B-30, Institutional Area, Sector 62, Noida, (UP) Ph 0120-3063348, for detailing on this.
24.	Why is Multicrypt required?	For inter-operability
25.	a) Is the Indian CAS required to work solely on a one-way network?	Indian CAS is presently required for one way as the DAS implementation is oneway. When the

	b) Is the Indian CAS required to work on a two-way mode when the network supports return path?	Indian cable business and relevant mandate moves to two way the migration of Indian CAS will follow. Bidder needs to take care that the CAS so developed is scalable to two way network.
26.	If a foreign CAS vendor provides a product which meets the features mentioned in the EOI, will this be accepted as the Indian CAS?	Existing CAS products will not be accepted. The idea is to develop a CAS and therefore the assistance from Government. If no development is involved bidder is welcome to supply to domestic manufacturers at suitable rates. If the bidder is a foreign company then they have to submit an undertaking that they will get registered in India prior to award of contract as per para 10.2 (8) of EOI.
27.	Please provide a list of the STB chipset vendors and types that require integration of the Indian CAS.	The CAS must be able to integrate prevailing STB chipsets, which should be given in the bid as per para 7(ix) of EOI
28.	Please confirm that the STB chipsets must be secure chipsets (vendor-specific secrets put inside each chipset individually at the time of manufacturing of the chip).	Security of CAS because of non secure chip set cannot be compromised at any stage.
29.	Please ensure that the selected bidder can prove that it has a CAS solution deployed and currently operational with more than 10 million subscribers in a single system (i.e., a single CAS database).	Not Agreed. New ventures interested to develop and deploy CAS are encouraged.
30.	a) Can the Indian CAS be integrated solely on STB manufactured in India? b) Can the Indian CAS be integrated on STB manufactured outside of India and imported into India? c) Is the $0.5 license fee valid if the Indian CAS is integrated on STB manufactured outside of India and imported into India?	No. Yes. The CAS should be made available at ≤ USD 0.5 per device/ STB for all manufacturers in India for a period of three years. Price for Foreign Manufacturers should not be less than the minimum price at which it is offered to STB manufacturers in India. No.
31.	Can the selected bidder select the STB manufacturers? Else, who will?	Yes.
32.	Who will provide the SMS?	The bidder (as per EOI).
33.	Will there be any exclusivity guaranteed to the selected bidder or will each operator be able to select any CAS supplier for its own network?	It is outside the scope of EOI.
34.	How many bidders will be selected for this program?	One bidder is proposed to be selected finally on completion of RFP process.
35.	Can you elicit the requirements of the broadcasters that the Indian CAS must meet as per the EOI requirement?	It is for the bidder to work out with the respective broadcasters.
36.	**Page No 5, SECTION 1.2 : Background & Rationale for the CAS states that** "While a CAS is not meant to operate for Digital TV only and it can be used for digital	Interactive services requires two way system, which has not yet been mandated. Radio Services does not require conditional access, hence Interactive services and Radio

	radio broadcasts, digital data broadcasts, and non-broadcast information and interactive services, it is mostly associated with the Digital TV " **Comments :** Separate Set-Top-Box can be provisioned under the following categories to have cost effective solutions to different customer segments. 1.Digital TV, Radio Broadcast, Digital Data broadcast & Interactive Services	Services have been kept outside the EOI. One way Data broadcast can be used in place of TV signals using the same CAS.
37.	2. Digital TV Broadcast including Radio Broadcast	Radio Services does not require conditional access, hence Radio Services have been kept outside the EOI.
38.	**II) Sl. No: 6 SCOPE OF WORK states that:** a) **Page No 13 Point No: 1** The CAS should support Simulcrypt and Multicrypt. **Comment:**Multicrypt implies that STB should support multiple CA systems which require multiple SMART cards in it. Even though the EoI mentions that a minimum of 5 Service providers are to be supported by CAS, there is no mention of the Maximum Number of SMART Cards to be provided in an STB. Please clarify.	Number of smart cards to be provided in a set top box would be a business decision of the set top box vendor. The relationship of CAS vendor with set top box vendor is integrating a specific CAS in the set top box
39.	Page No 14 **Point No. 5 and point No. 6 states that** The fingerprinting should be changeable through the head-end system. The fingerprinting location, presentation including background and foreground colors, fonts and orientation should be controllable by the head-end system. The covert and overt channels should be available for handshaking the finger prints between head-end devices and viewing device. **Comment**: These two points may please be elaborated as it is not clear.	Fingerprinting is a operator requirement to ascertain if some programs are being accessed in unauthorized fashion, and re-transmitted. Operator may enable fingerprinting option at any time, which results into a string of character overlaid on the video being viewed. This additional characters (fingerprinting of the box or card or both) is visible on the TV that is showing that video for which it is not authorized. The place and colour rendition of the additional item is changed as per operator's choice so that the unauthorized viewer or transmitter of the signal is not able to mask it. In overt fingerprinting the additional characters are visible by the viewer. In covert fingerprinting additional devices are required to view it.
40.	**c) Page No 15, Point 13.d states that** On the head-end system, the CAS system should be able to generate various reports including Error reports (for example due to unsuccessful deliveries, failed authentication etc.) **Comment:**The Mode of presentation of the Error report generated needs clarification as to whether it should be: a) as an Alarm message on the screen as and when the error report is generated. b) on query c) period bulk report	The reports would be as per TRAI guideline.

41.	Generally SMS is not a CAS component. SMS is analogous to BSS (Business Support System) of the telecom industry, whereas CAS through it's SAS is analogous to an OSS (Operations Support System), and the choice of which is left to the operator independent of CAS. SMS development is a separate discipline as it also includes financial modules for accounting and related taxation purposes. SMS is the front-end utilized by the operator's business team. Therefore, TRAI has also specifically restricted business operation and reporting through SMS terminals/interfaces only and prohibited the use of CAS for the purpose to prevent misuse and avoid redundancies. It should be appropriately mentioned that CAS, through it's SAS, should provide the appropriate software Application Programming Interfaces (APIs) to interate with existing multiple SMS compliant with TRAI, BECIL and Indian taxation laws requirements. - SAS does not act as a backup in case of failure. It should be mandatory for SAS to include hardware and software redundancies in case of failure. - It is not necessary that the Security Processor is exclusively embedded either in the smart-card or the directly in the set-top box. It is now mandatory for all latest CAS to utilize the Advanced Security Processor embedded in the set-top box SoC/processor in combination of, or without, an appropriately paired secure smart-card to provide the highest levels of security achievable currently. The Indian CAS should also make this requirement mandatory.	The relationship of SMS and CAS is very close in allowing access to subscribers. SMS is also not a part of CAS system today. Again here the idea of including SMS in the EOI is to offer an integrated system which can be deployed by the targeted operators in their head-ends immediately without bothering about external SMS. There is no restriction in EOI to using other DVB compliant SMS if the operator wishes so.
42.	Middleware is not a CAS component. In fact, CAS is required to deliver System on Chip (SoC / processor) and Operating System (OS) specific software libraries used to build the set-top box (STB) to either the middleware or STB integrator/vendor/manufacturer (manufacturer) for integration in the STB platform. These libraries are then integrated with the STB platform with or without a middleware at the operator's discretion. At the low-end of the STB market the STB platforms are delivered without a middleware as the operators are unable to afford the cost of a middleware.	Indeed Middleware is normally not a part of CAS now (though in initial phase of development of CAS internationally rudimentary middleware was a part of those CAS then). Today International Middleware vendors charges as much as CAS. To address the stated purpose of reducing the licensing burden on the operator a functional middleware is within the scope of this EOI.
43.	Section5: Objectives & Salient Features Of Indian CAS - TRAI compliance and BECIL certification of those compliance by the Indian CAS, together with the interfaced SMS, at all operator locations adopting Indian CAS should be made mandatory. - A minimum period for maintenance of the	TRAI compliance and BECIL certification is mandatory Other points will be considered and detailed at the RFP stage.

	Indian CAS should be specified. All operators require constant tweaks, modifications and updates of the STB/CAS platforms to suit inclusion of new services, networks, head-end equipment, CAS, SMS and security/regulatory/local requirements. Therefore, a minimum period of 5 years from the last commercial sale of the CAS is recommended so that the operator is not inconvenienced and forced to replace the purchased set-top assets built with the Indian CAS during the economical life of the . Also, a commercial fee of maximum 10%/annum of the cost of one-time CAS fee (10%/annum of USD 0.5/unit as recommended by the EOI paper) should be allowed to be levied on the operator using the Indian CAS towards an Annual Maintenance Contract. - The wordings "USD 0.5 per device/STB for all manufacturers" is incorrect, ambiguous and incomplete. The CAS business ecosystem sustains itself on multiple revenue streams levied by the CAS vendor; all of which costs increases the final price the STB/CAS platform burdened onto the operator adopting the CAS. 1. Some large CAS vendors charge additional one-time and recurring (per STB unit) fees to the STB SoC/processor vendor for the qualification, integration and development of the Soc/processor's Security Processor software (black-box development) and serialization (embedding of operator specific keys and unique serial numbers). It'll not be right to deny the efforts of the CAS vendor to qualify as many STB processors as feasible to make their CAS ecosystem expansive. Therefore, this service for the Indian CAS should be restricted to maximum USD 5,000 one-time fee per SoC/processor only. And, it should also be made mandatory for the Indian CAS developer to demonstrate the said CAS functions ported on at least three (3) different SoC/processors from three (3) different SoC vendors (one SoC from each vendor) in the case of 2,50,000 units deployment mandated elsewhere in the document, so as to make the Indian CAS really universal in nature.	
44.	License fees: Most large CAS vendors charge additional one-time and recurring (per STB unit) fees to the STB manufacturer/vendor for the qualification, integration and certification of the final STB/CAS platform, and their variants, towards boot-loader verification and certification, verification and certification of the software Over	Today the international CAS vendors collect revenue from each relationship with stakeholders, be it the operator, set top box manufacturer, operator and hardware vendors as annual maintenance fee, software upgrade fee etc. probably such is expected with the stranglehold they have on this vertically integrated business.

	the Air (OTA) loader, provisioning of CAS libraries, qualification and certification of the final software build, serialization keys, and the maintenance efforts towards those software builds. All of these efforts by the capabilities and skills of the STB manufacturer/vendor, and it'll not be right to deny the CAS vendor the right charge the STB vendor/manufacturer by their individual assessment of the STB vendor/manufacturer. Therefore, this cost should be restricted to maximum USD 5,000 one-time fee per STB platform version only, inclusive of maximum three (3) software update certifications within maximum three (3) months of the first production certification of the final STB product with the STB vendor/manufacturer to accommodate bug fixes in the STB vendors/manufacturers software development. And, this fee should also include all updates required by the Indian CAS vendor to make their solution error, recover from any hack/exploit demonstrated by any third-party after the deployment of the CAS by the operator, and/ or comply with TRAI, BECIL and broadcaster's requirements throughout the life-time of the product; at no additional cost to the STB vendor/manufacturer, and at no additional cost to the operator in case of an valid AMC being in place with the operator. 3. All CAS vendors charge a one-time license and activation fee per STB device (per unit) to the operator adopting their CAS solution, or the manufacturer when bundled with the STB device. Therefore, the above mentioned ambiguous wordings should be changed to "USD 0.5 per device/STB for all manufacturers/operators towards a perpetual use one-time license and activation fee". 4. All CAS vendors need to levy appropriate fees towards the Annual Maintenance Contract required by the operator as mentioned earlier in this email. Therefore, as explained earlier the AMC fees should allowed and restricted to a maximum of USD 0.05 per device/STB unit per annum (10% of USD 0.5). The start of the AMC should be only be applicable minimum three (3) months after the first successful deployment sign-off operator and the AMC cost should include support for minimum 5 updates per annum required by the operator of the STB/CAS platforms to suit inclusion of bug-fixes of the STB software, new services, networks, head-end equipment, CAS, SMS and	However, that is precisely what EOI would like to address through a fixed fee structure which is competitive and attractive to the cable operators The relationship of SMS and CAS is very close in allowing access to subscribers. Indeed SMS is also not a part of CAS system today. Again here the idea of including SMS in the EOI is to offer an integrated system which can be deployed by the targeted operators in their headends immediately without bothering about external SMS. There is no restriction in EOI to using other DVB compliant SMS if the operator wishes so. Local language support is crucial for the targeted operators. Indeed the internationally available CAS does not have it. The externally purchased middleware renders that support. Keeping the slim middleware helps here to address the need of large number of Indian operators. And that is why some of the middleware functionality has been kept in the EOI Other points will be considered and detailed at the RFP stage.

	security/regulatory/local requirements. The EOI document needs to specify all of the four (4) categories costs mentioned above to prevent the Indian CAS vendor from putting any excessive burden on the operator adopting the CAS in a non-transparent manner. 5. Section 6: Scope of Work - 2. Boot-loader should not be allowed to update the software on the STB. Software update is the function of the Over-the-Air (OTA) loader. All advanced Security Processor based CAS platforms provide a verified, locked and signed boot-loader specific to a STB SoC/processor. And, the boot-loader only verifies and allows a verified and signed OTA application to effect a software update. It should be mandatory for the Indian CAS to support a DVB-SSU Extended Profile based OTA loader to be provided by the STB vendor/manufacturer. 6. It should also be mandatory for the finger-print features of the Indian CAS to be compliant with TRAI requirements with support for both overt and covert methods of on-screen display of the finger-print information as recognised by the Indian broadcasters. There is no specification of overt and covert channels of handshake between head-end and display devices (STB). And, it has clearly specified by TRAI that CAS should not allow finger-print commands to be blocked or subverted on route to the display device (STB) when initiated the CAS head-end. Therefore, it is assumed that all communication in this case is covert only, and can be implemented in a proprietary manner. - 7. As explained earlier SMS cannot be part of the CAS development. - 8. By Bmails it is assumed to mean Broadcast Mails. Therefore is no need for storing 100 mails on the STB as most cases will not require more than 20 mails per STB, and there are commercial implications on the cost of the final STB price to the operator due to the increase in flash-memory required to store the mails in a non-volatile manner. It should also be mandatory to comply by TRAI requirements and allow for broadcast mails to all STB, targeted group of STBs and/or individual STBs in the operator network. - 9.a. Local language font support is never a part of CAS product. Local language renderers are always included in the STB software stack and/or middleware based on the affordability of the solution by the operator. And, there are per unit (recurring) commercial implications on the number of languages support to be bundled with the STB. Even CDAC Pune involved in	

	providing this product and they can easily specify the implications on the per unit license cost. Also, language fonts will have to selected as per the regional requirements of individual operator and it will be very difficult for the STB/manufacturer to integrate and test various fonts to suit individual operator. Also, it is not clear as to the purpose of the regional language support. If the language support is required for the Program Guide information then it will put additional burden on the operator to acquire guide content in additional languages and also increase the bandwidth required on their networks to transport such data. The support for local languages should be kept out of the CAS specification for these reasons and allowed to be left to the discretion of the STB vendor/manufacturer and operator's requirement.	
45.	9.c. Entitlement renewal mechanism should not be part of only the Smart-Card based CAS, but should be mandatory for all type of Indian CAS. Entitlement renewal is a very powerful tool required in a one-way network to weed out surreptitious use of valid STBs in an operator's networks beyond the validity period of the entitlements. Some of the CAS business processes on the one-way network are highly dependent on crucial natural expiry of the current entitlements and authorised renewal of subsequent entitlements to drive collection of subscription revenue in the market. Any CAS which does not support this feature will lead to loss of subscription and tax revenues in the market. - 11. It should be clearly specified that EMMs and ECMs transmission using TCP/IP protocol suit should be restricted between the CAS and scrambler-multiplexer within the operators head-end. And, the Indian CAS should also allow for Custom and/or PPV EMM transmission directly to the STB over a TCP/IP path in a secure manner to support future use of hybrid (broadcast and broadband) network architecture for delivery of Value Added Services (VAS)	Will be considered and detailed at the RFP stage.
46.	13. It should also be mandatory of the Indian CAS to comply by the reporting and database reconciliation with SMS requirements as specified by TRAI and Indian broadcaster, and certified by BECIL.	TRAI compliance and BECIL certification is mandatory
47.	14. Disaster recovery, fail-safe switch-over, and periodic backup mechanism should be specified only for CAS. SMS should be kept out of the purview of this document. Though, periodic reconciliation mechanism between CAS and	Will be considered and detailed at the RFP stage.

	SMS databases, at least monthly, to comply with the TRAI requirements should be specified as mandatory.	
48.	These are all SMS features and should be kept out the CAS scope of work.	As commented earlier
49.	Support for encryption of codecs like H.264, H.265, Dolby Digital Plus, AAC LC and HE, and other future broadcast codes to support HDTV, 3DTV and UHDTV should also be made mandatory.	Will be considered and detailed at the RFP stage.
50.	The STB boot time should be specified as less than 15 seconds. All latest entry-level advanced Security Processor based STB platforms have enough speeds to achieve this time which can be easily demonstrated.	Will be considered and detailed at the RFP stage.
51.	Additional features and scope of work that need to be included in the EOI a. It should be mandatory for the Indian CAS to provide SNMP MIB and traps/alarms for monitoring of the health of the SAS and EMM/ECM Generators hardware and software functions. b. It should be mandatory for the Indian CAS to provide support for multiple head-ends in an operators networks from a single SAS setup to facilitate wide-scale adoption by Indian cable operators.	Will be considered and detailed at the RFP stage.
52.	c. It should be mandatory for the Indian CAS to demonstrate integration with at least three (3) individual models of DVB scrambler-multiplexers from three (3) individual head-end equipment vendors for achieving the 2,50,000 units scale mentioned elsewhere in the document, to make the Indian CAS scalable and universal.	Will be considered and detailed at the RFP stage.
53.	d. It should be mandatory for the Indian CAS to provide granular configuration and support for persistent and one-time delivery over a DVB-DSMCC standards compliant transport carousal over the operators network for preset commands required for day-to-day network operation like STB Authorisation/De-authorisation, Service Activation/De-activation, Suspension (Barring)/ Restoration of STBs/Services, time-based Suspension/Restoration of Service and Geographical Suspension/Restoration of Services by head-ends, by group or individual units.	Will be considered and detailed at the RFP stage.
54.	e. It should be mandatory for the Indian CAS to provide the mechanism for explicitly white-listing (authorising) of validated/certified STBs and Smart-Cards with built-in valid network keys and, unique STB keys and serial-ids specifically assigned to the operator to prevent operation of unauthorised STBs in the network.	Will be considered and detailed at the RFP stage.

	All unique serial-ids and keys thus assigned should not be replicated in the any form any time in the future in the same or any other network using the same Indian CAS.	
55.	f. It should be mandatory for the Indian CAS to provide the mechanism for explicitly black-listing (de-authorisation) of to prevent the operation of the any hacked/exploited/damaged STBs, and or Smart-Cards, without resorting to reuse any time in future of the unique keys and serial-ids previously assigned to the black-listed STB devices	Will be considered and detailed at the RFP stage.
56.	g. It should be optionally required of the Indian CAS to provide ECM based finger-printing support to enable finger-print information on the display on selected Service only.	Will be considered and detailed at the RFP stage.
57.	h. It should be mandatory for the Indian CAS to provide support for individual encryption of interactive and/or information data-services; like news, downloadable games, catalogues, etc.	Will be considered and detailed at the RFP stage.
58.	What is the role of the Govt. body which will be involved in the development of this project?	According to Multiplier Grant Scheme and EOI
59.	If we have to work together with a Govt. body then who owns the IP?	Refer para 7(iii) of EOI
60.	What will be the revenue sharing formula between this body and us?	Revenue will be of the Bidder. However, specific details are to be provided at RFP stage.
61.	Can we customize and sell this product in the International market?	Refer para 5 (iii) of EOI
62.	Who will decide the pricing of the product after 3 years?	The bidder
63.	The Govt. advises on certain conditions like signing up with operators with a min market share of 10% etc. How and what is the Govt's role in enabling this?	Bidders are expected to meet this condition.
64.	How will the Govt. help in the adoption of this solution?	It is expected that this being a Government initiated project, there will be enough awareness and confidence among the operators to opt for it.
65.	When is this CAS product expected to be released. If Industry meets the digitization goal by FY2014, the commercial feasibility of this project will be very difficult as by then most of the cable operators would have adopted CAS from foreign companies?	Refer para 10.2 (7) of EoI
66.	If we have to develop and sell the product without any Govt. incentive to operators to adopt, then what is the reason for developing this product under this EoI?	Government support has been envisaged as per para 7(i) of EOI
67.	The CAS vendors are charging anything between USD 0.50 to USD 2.5 per STB right now and this can come down in a year's time based on the changing competitive landscape, how has this been factored in while proposing a price of USD 0.5	Market forces will always prevail. It will be a welcome situation if all the international CA vendors bring down the price to $\leq$ USD0.5 per device/ STB.