INDIAN CAS
(iCAS™) READY

By JAYESH DUBEY
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ByDesign India Private Limited

COMPULSORY DIGITALIZATION

The Government of India has issued an Act to amend the Cable Television Networks (Regulations) Act, 1995 for all cable TV networks to compulsorily shift to a Digital Addressable System (DAS). A 4 phase transition has been finalized. This amendment also makes it obligatory for every operator to transmit or re-transmit all channels only in an encrypted form through a DAS.

As per industry reports, even after 31st December 2015, there are still about 100 million TV homes in the country which are yet to get digitized.

CONDITIONAL ACCESS SYSTEM

A Conditional Access System limits the access of TV signals to only authorized viewers. While a CA is not meant to operate for Digital TV only and it can be used for digital radio broadcasts, digital data broadcasts, and non-broadcast information and interactive services, it is mostly associated with the Digital TV and related operations.

Conditional Access System (CAS) is a description used for a set of hardware devices (including a Set Top Box) and connected software used at different stages of distribution of a TV channel through which normally the pay channels are transmitted in encrypted form. The subscriber is given authorization based on his choice & will pay for only his chosen channels.

The authorization is given and controlled usually by a Multi System Operator (MSO) or an Independent Cable Operator (ICO), who owns the Conditional Access System in a Cable Television Network. An MSO is often assisted by the Local Cable Operators (LCO).

Basically it is the protection of content by requiring certain criteria to be met before granting access to this content. The signal is encrypted to...
prevent unauthorized reception. A set-top box containing a conditional access module is used in the customer premises to receive and decrypt the signal.

A CAS system must enable subscribed customers to view the content and must prevent unauthorized viewers from viewing the content at the same time.

DEITY PROJECT

Department of Electronics & Information Technology (DeitY), Government of India had invited eligible bidders to submit their response to their RFP (RFP No. 8 (22) / 2012 – IPHW) dated 6th Aug 2013 for the development of “Indian Conditional Access System (CAS)” in accordance with the conditions and manner prescribed in the said document.

The duration of the project is as under

Development Phase: 1 Year
Implementation and Support PHASE: 10 Years after the development phase

Through a transparent bidding process the project was awarded to ByDesign India Private Limited with a target date to complete the development work within a year i.e. By 15th November 2015.

The estimated project cost is approx. `29.9 Crores, out of which Government of India shall be supporting the project with 2/3rd of the project cost which is approx. `19.97 Crores. Balance amount and any escalation in the project cost shall be invested/ borne by ByDesign India Private Limited.

SUCCESSFULLY COMPLETED

ByDesign has successfully completed the development phase which has been reviewed by Deity and vide the letter circulated by DeiTY (Ministry of Communication and IT – Government of India), it has given a go ahead for implementation of Indian CAS (iCAS™) in field. The same has been put on the DeiTY website also in the link below.

http://deity.gov.in/esdm/product-initiatives

REVIEWED & TESTED

The complete product was developed with the review done by C-DAC (Centre for Development of Advanced Computing) in a record time of 1 year.

"The DEITY PROJECT"
It has also been tested by a NIST (National Institute of Standards and Technology - United States) accredited third party lab for CAVP (Cryptographic Algorithm Verification Program). The Cryptographic Algorithm Validation Program (CAVP) provides validation testing of FIPS-approved and NIST-recommended cryptographic algorithms and their individual components. Cryptographic algorithm validation is a prerequisite of cryptographic module validation.

The whole development program was monitored by Government of India’s Program Review and Steering group (PRSG) which includes members from various Ministries and departments of Government if India, TRAI, IISc and Cable Operator Association.

THE INDIAN CAS (iCASTM) PRODUCT CHIPSET INTEGRATION

The product which has been designed and developed 100% in India, has been validated by a NIST accredited third party lab for CAVP. The product is a chipset designed and developed 100% in India, has been tested by a NIST accredited third party lab for CAVP. The product is a chipset designed and developed 100% in India, has been tested by a NIST accredited third party lab for CAVP.
integrated with Set Top Box Platforms namely
(1) ST Microelectronics (2) M Star Semiconductor
(3) Broadcom.

**SYSTEM STRUCTURE Designed BY BYDESIGN**

### STB COMPONENTS
- CAS Client
- Complete Middleware
- Fully Integrated User Interface (UI)

### HEADEND COMPONENTS
- CAS Server
- Complete Subscriber Management System (SMS)
- Complete Billing and reporting (As required by TRAI and BECIL)

This entire stack of both Set Top Box side and Headend side is available to any Indian Cable Operator or Indian Set top box Manufacturer at a rate of $0.50 per STB for first 3 years (Around ₹ 11 per STB per annum with current US dollar rate) and would include all the upgrades and support for the same. Being modular in nature the operator’s would have an option to use their own Middleware/ User Interface.
Interface and / or Subscriber Management System (SMS) if they please, with iCAST™. This amount may be bundled with the box cost if the MSO wants it that way or may be paid directly to ByDesign as per their convenience.

**iCAS + The SMS + Middleware Is Priced At below ₹ 1 Per STB / Month**

The product integration has been completed on High Definition (HD MPEG 4) chipsets. Customized version of the same can be ported on Standard Definition (SD MPEG4) chipsets as required by the operators (MSOs). The product in current form supports 7 Indian Languages on HD MPEG 4 chipsets.

**Middleware For HD STBs Is Available In 7 Indian languages**

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**INDIAN CAS**

**SMS FRONT END AND BACK END**

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**Dashboard**

[Image of a dashboard showing various metrics and graphs with data points and legends.]
SMS

One of the key features of the product is the complete Subscriber Management System (SMS) which is offered with no extra cost and fulfills all the subscriber management features including all the reports and details required by various Broadcasters, TRAI and BECIL.

iCAS Supports Cable TV, DTH & DTT Transmissions

The iCAS™ is agnostic to transmission standards and supports Satellite (DVB-S2) & Terrestrial (DVB-T2) transmissions along with Cable (DVB-C).

iCAS Supports Simulcrypt, Allowing Any earlier CAS To Be Used Along With iCAS

The iCAS™ is simulcrypt compliant and can work with other CAS in the system. This gives the operators flexibility to adopt Indian CAS even though they have deployed some other CAS in past.

SERVICE AND SUPPORT

ByDesign India Private Limited shall be supporting the product for at least next 10 years with new features, new chipsets integration as well as upgrades for the product. It has setup a call center to provide online support to the Operators during deployment as well as operations. The technical support center would be manned with call center executives who would be trained not just in Hindi and English but multiple Indian languages.

The Indian CAS helpline numbers are +91 90 6602 5600.

Apart from this company executives would be available across various states in India to provide first hand support on case to case basis.

Operators can also send their requirements to the following email IDs: helpdesk@bydesignindia.net / sales@bydesignindia.net

More contact details are available at company website www.bydesignindia.net
INDIAN CAS

AVAILABLE ON INDIAN STBS

ByDesign has signed the Memorandum of Understanding (MoU) with various Indian Box Manufacturers (Prysm Electronics, MyBox Tech Pvt Ltd, Smasher Communications Pvt Ltd, Exza and ABS Production Pvt Ltd) and is in advanced stages of talks with several other Indian STB Manufacturers (Surbhi and C-Net).

ByDesign has also begun discussions with various cable and DTH operators of the country for implementation of Indian CAS as it provides a best in class, feature rich, modular and cost effective solution with complete support provided by an Indian Company and the program supported by Government of India.

Doordarshan Is Considering iCAS For FreeDish

Doordarshan is also considering Indian CAS (iCAS™) for its Free Dish program and is in talks with ByDesign India Private Limited for the integration with its headend.

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FREE CAS SERVER

The CAS server which shall be placed at the Headend would include all the functionality described above. ByDesign is not charging for the CAS Servers if the operator is signing up for at least 10,000 licenses. Special schemes are available for operators who may wish to go for less than 10,000 licenses and the details can be provided on a case to case basis by the company.

Similarly there are no additional costs for Server installation and upgradation.

CONCLUSION

The product fulfils the objectives of Government of India “Designed and Make in India” program as well as DeiTY’s “Digital India” program. This initiative would push STB manufacturing in India which will help develop Electronics Manufacturing ecosystem in India thus saving precious foreign exchange of the country which is otherwise spent in importing the STBs from foreign countries. Indian CAS would also help in a big way to achieve Government of India’s objectives of digitalization of STB program specially in DAS 3 and DAS 4 locations.

ABOUT THE AUTHOR

Jayesh Dubey received his BE in Electronics Engineering from Nagpur University in 1995. He was awarded the University Gold Medal for highest marks at the university for his Executive Master of Business Administration – Finance from Symbiosis International University Pune in 2012 and a Golden Shield for the highest grade in the Post Graduate Certificate in International Marketing from Indian Institute of Foreign Trade (IIFT) New Delhi in 2014.

His professional career of more than 20 years, started in 1995 as a Network Engineer in RPG Group Kolkata. In 1997 he joined Reliance Telecom Ltd. Mumbai, for its Pan India Network before joining Velankani Group in May 2000 when it commenced operations in India. At the Velankani Group, he has held various positions in Software Development, Network Design, Client Relationship, General Manager (Products and R&D) & was appointed Vice President in 2014.

He is currently responsible for complete management of product development and production planning at ByDesign India Private Limited. During his current role ByDesign India has developed various STB solutions, Intelligent Surveillance Solutions and many Internet of Things (IOT) products for Smart Cities. He has been instrumental as a key member during the bid for Indian Conditional Access System (Indian CAS) for ByDesign. After being awarded the project by DEITY, Government of India, he has been leading the effort to complete the project as per Government of India guideline.

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