



SMIT Holdings (HK) Limited

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Mr Shri. Anil Kumar Bhardwaj,  
Advisor (B & CS)-II,  
Telecom Regulatory Authority of India (TRAI),  
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jadvisor-bcs@trai.gov.in

Dear Mr. Bhardwaj,

SMiT, a CI Plus LLP member, is the leader for design and manufacturing of chipset and CAM enabling the reception of PayTV. SMiT has been providing millions of CAM for TV subscribers worldwide.

As a main PCMCIA CAM provider in India market, we are convinced that the upgrade of DVB CI Plus slot is the key for the development of the PayTV ecosystem, which benefit for industry, environment and subscribers.

In response to your "Consultation Paper On Interoperability of Set Top Box" dated 11<sup>th</sup> November, 2019, we would like to give you the following comments:

- Chapter 3.3:
  - **Cost of hardware:** as a chipset designer, we have improved the cost from chipset to PCBA which has quite lower cost than PCMCIA generation.
  - **User interface and user experience:** in conjunction with HbbTV OpApp, the standard addresses rich UI and UX which are the similar or better than STB.
  - **USB:** USB interface is more compact interface and available for all STB and iDTV. Replacing the PCMCIA interface can reduce of the cost of STB and iDTV. And USB device can be more easily adopted by user than PCMCIA device.
- Chapter 2.9:
  - **ECP:** current CAM supports Enhanced Content Protection. Ready for 4K TV



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services.

- Chapter 2.15:

- **CAS:** current CAM hardware supports major CAS' security requirement.

In conclusion, we deeply believe Government Regulatory Authority mandating CI Plus 2.0 in all the new FTA STB, CAS STB and iDTVs, is the best benefit for all the players of payTV industry. Easy, fast and convenient switch among India broadcast operators.

Your faithfully,

Cadiz Hong  
SMIT Technical Director  
[gzhong@smit.com.cn](mailto:gzhong@smit.com.cn)  
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PS: attached presentation "Launching CI Plus 2.0 Technology in India"

# Launching CI Plus 2.0 Technology in India

Presented by

**Smit**

November 26, 2019



# Contents

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**1. What is CI Plus 2.0?**

**2. Why need to upgrade?**

**3. How to proceed?**

# What is CI Plus 2.0?

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ETSI has published [TS 103 605 V1.1.1](#), the second generation DVB Common Interface specification.

- TS 103 605 : [http://www.etsi.org/deliver/etsi\\_ts/103600\\_103699/103605/01.01.01\\_60/ts\\_103605v010101p.pdf](http://www.etsi.org/deliver/etsi_ts/103600_103699/103605/01.01.01_60/ts_103605v010101p.pdf)
- DVB CI Plus official website: <https://www.dvb.org/standards/dvb-ci-plus>

While the use of DVB CI Plus is widespread in Europe and some emerging market, the costs associated with adding a PC Card slot mean that its implementation in the rest of the world has been limited. Since virtually all new TV sets support USB, the cost implications of implementing DVB CI Plus in future will relate mostly to software integration.

In addition to new and existing features and functionality, the current PCMCIA base physical form factor will be replaced by USB form factor interface which is more compact interface. Together with the latest HbbTV technology, the unified UX and interactive services are provided across different platforms.

# Figures



 The red area is printable area

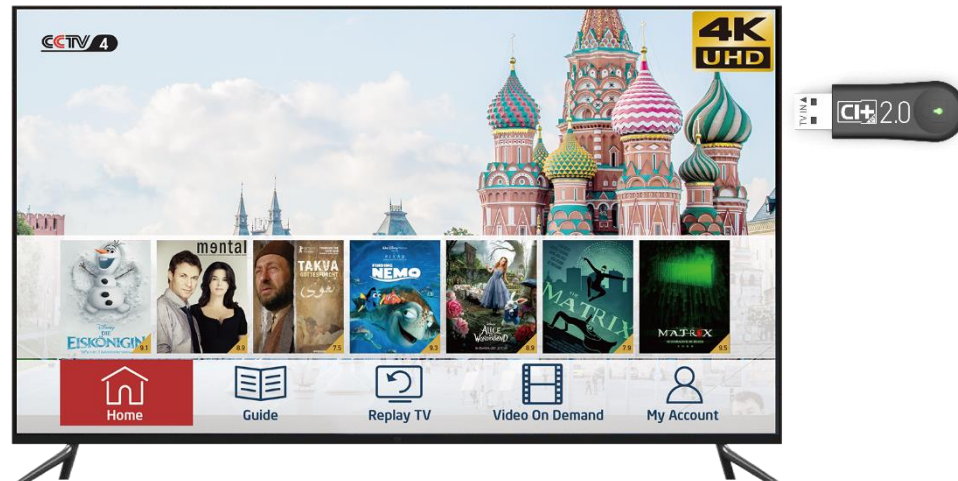


# Package



# Use case

## Product use case 1, Live TV



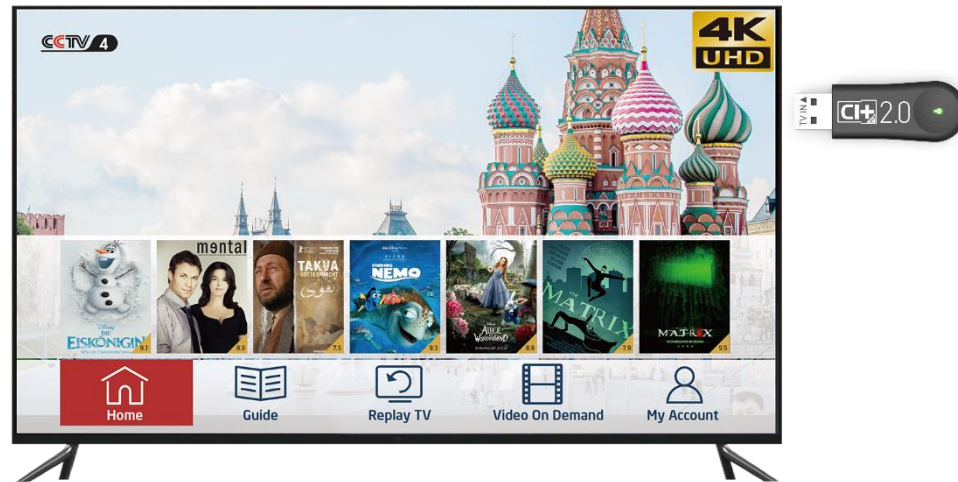
Basic functionality of watching Live TV.

- Install TV service list from CAM automatically.
- Channel list loading from CAM, designed by operator.
- Descramble the TV programs with official CAS library.



# Use case

## Product use case 2, Live TV and interactive service



Except Live TV, the additional interactive features are supported.

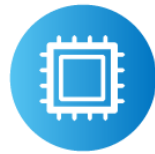
- App-as-a-source, (TV input source)
- Uniform user experience across TVs and STBs,
- EPG,
- Recommendation from Live,
- Replay TV,
- Video On Demand,
- Account, etc.

# Advantage

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DVB Standard



Secure SoC



4K Ready



Customization



Plug and Play



USB Interface



Lower Cost



Energy Saving



Higher Quality



CAS Licensed

# Product Features

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**NEW** Based on DVB CI Plus 2.0, compatible with CI+ 1.3/1.4/ECP features

**NEW** USB Form Factor

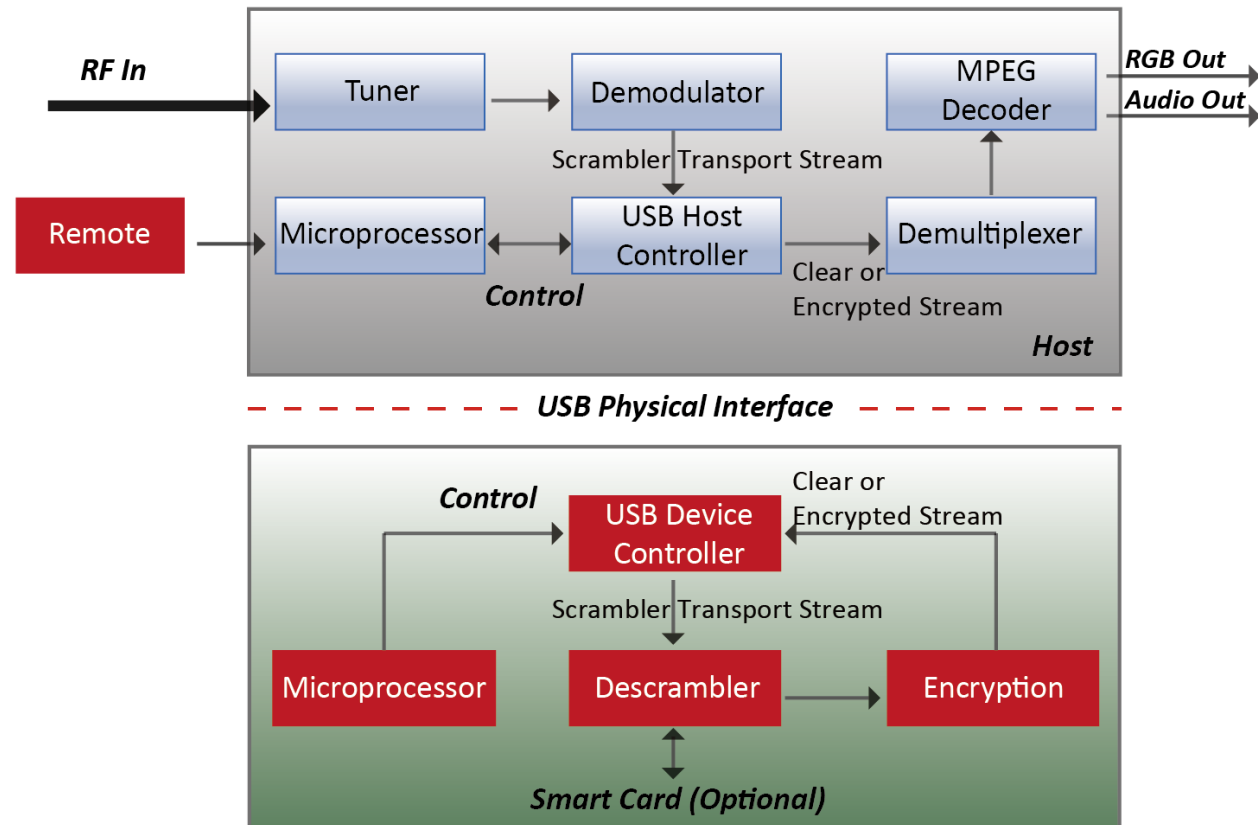
- ✓ Plug and Play
- ✓ Support SD/HD/FHD/4K/HDR
- ✓ Official CAS embedded, One CAM, one CAS.
- ✓ CAS-based Smartcard or Cardless solution (Cardless / SIM card / Standard smartcard)
- ✓ Support Forensic Watermarking
- ✓ Support DVB-C/T/S live signal
- ✓ Support OTA software upgrade, DVB SSU compliant
- ✓ Support HbbTV Operator Application for better User Experience

# Technical Specification

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- ✓ SMiT 32-bit advanced Secure SoC
- ✓ TS Processing: up to 96Mbps
- ✓ Common descrambling algorithm of DVB, DVB-CSA1/2/3, AES
- ✓ Operation voltage: 4.5V ~ 5.5V
- ✓ Operation current: <250mA
- ✓ Power consumption: <750mW
- ✓ Work temperature: 0°C ~ 55°C
- ✓ CE, RoHS, REACH, WEEE,
- ✓ [optional] Smartcard Reader: ISO7816 T=0/T=14 Compliant
- ✓ [optional] Support MPEG-DASH or HLS
- ✓ [optional] Support DRM for IP content
- ✓ [optional] Support time-shift or PVR
- ✓ [optional] Support MPEG2-TS or ISOBMFF

# System Architecture



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**1. What is CI Plus 2.0?**

**2. Why need to upgrade?**

**3. How to proceed?**



# Why need to upgrade from PCMCIA to USB?

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## Universal Interface, Wider Deployment, Convenient Change

- ✓ USB interface is available in all the STB and iDTV. The certificated STB and iDTV can support any USB CAM from any Broadcast operators, via Plug and Play.

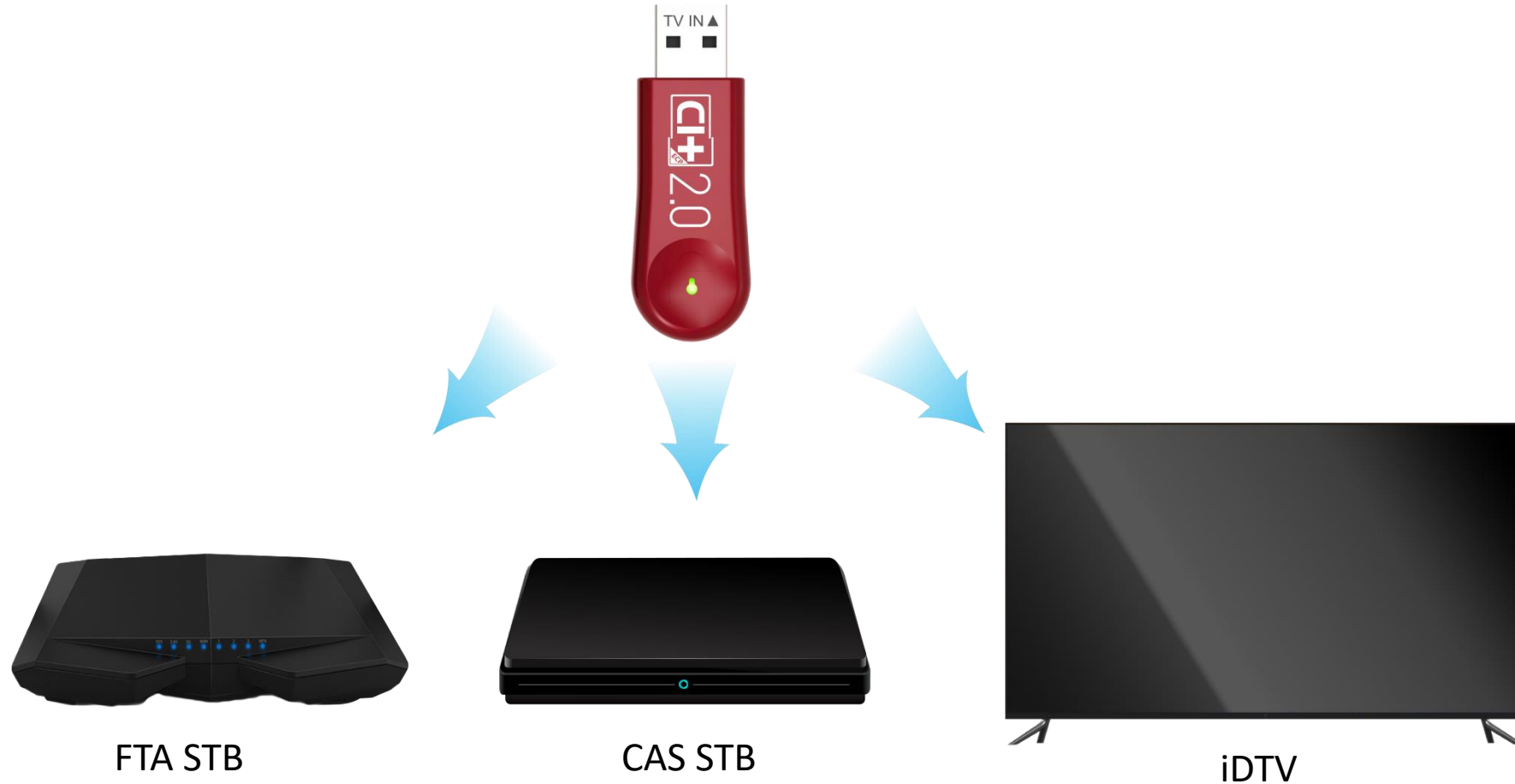
## Cost Effective

- ✓ Devices with USB interface, replacing PCMCIA interface, reduce the cost of STB or iDTV. Cheaper than before.
- ✓ Lower power consumption.
- ✓ Fewer environmental pollution when user change to new operator.

## Better User Experience

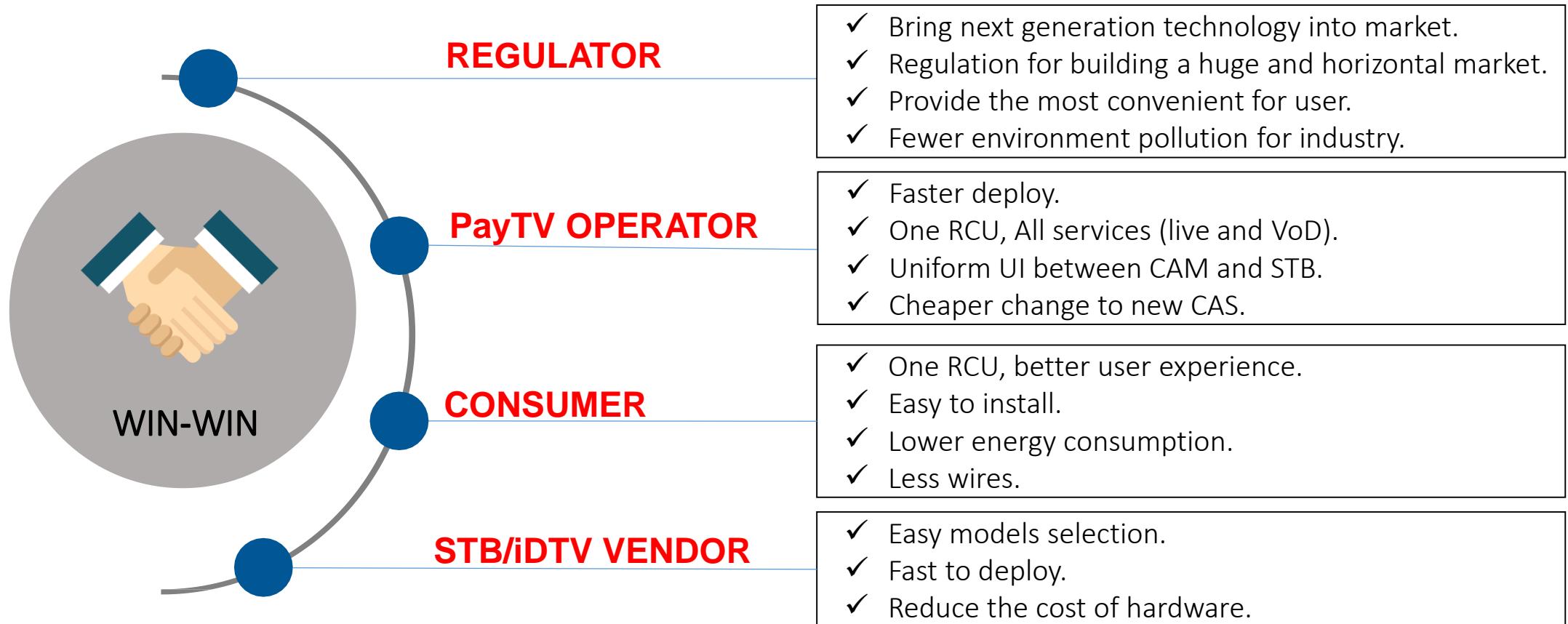
- ✓ One Remote Control, Fewer cable line.
- ✓ Uniform user experience over multiple devices, by using the latest technology CI+2.0 and HbbTV OpApp.
- ✓ Plug and Play, convenient change among India operators.

# Why need to upgrade?



CI Plus 2.0 USB CAM can be used on CI Plus 2.0 FTA STB / CAS embedded STB / iDTV.

# Why need to upgrade?



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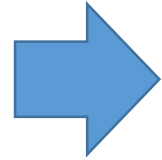
**2. Why need to upgrade?**

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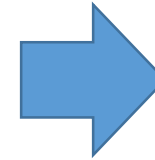
# How to proceed?

## REGULATION FIRST, EDUCATION AND ADVERTISING NEXT

Regulators



TV Operators



End Users

### PUBLISH REQUIRMENTS

1. All iDTV & STB, from DD/MM/2020, are mandatory to include CI Plus 2.0 USB slot.
2. All operators should offer CI Plus 2.0 CAM option for their subscribers.

### CERTIFICATES

1. Inform end users of CI Plus 2.0 technology.
2. Offer certificates for CAM manufacture(s) to their CI Plus 2.0 devices.

### MARKETING

1. Advertising on CI Plus 2.0 Products
2. Bundling of STB/iDTV sets and PayTV services at the point of sales with promotional offers

### 1-Regulation

CI+ 2.0 Mandatory on STB/iDTV/CAM at the same time

### 2-Activities

Ensure products performance/End user education/Marketing activities



THANK YOU!  
谢谢!

**Smit**

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