

# IRDETO SMARTSTART ADVANCED TV

## AN EXTENSIBLE, TURNKEY PAY-TV SOLUTION

TODAY'S CONSUMERS HAVE SO MANY OPTIONS WHEN IT COMES TO DIGITAL CONTENT FOR ENTERTAINMENT. AND THOSE CHOICES MULTIPLY DAILY AS BOTH PROFESSIONALS AND AMATEURS MAKE NEW CONTENT AVAILABLE. MEANWHILE, MORE AND MORE DEVICES FOR VIEWING CONTENT ARE CONTINUOUSLY INTRODUCED.

These are some of the major drivers behind the constant push-pull facing content owners and distributors in their quest to deliver quality, in-demand content via broadband and broadcast networks that is targeted to specific audience interests. Along with meeting customer demands on a variety of devices, content owners and distributors need to protect their own interests. They cannot afford to compromise quality or security when it comes to maximizing the value of their digital assets.

However, pulling all the pieces together to meet these objectives is far from simple. This is where Irdeto can help by offering a comprehensive portfolio of technology solutions for protecting content while supporting business objectives. From content creation to middleware integration to distribution, Irdeto technology goes beyond protecting digital assets and provides platforms that create more engaging customer experiences, improve customer service and easily extend existing offerings through up-sell opportunities.

**Irdeto SmartStart** is an end-to-end, turnkey solution pre-integrated for cable, satellite, terrestrial and IP networks. It provides proven content protection security, flexible middleware, customer care and billing, many pre-certified consumer electronics devices and set-top box (STB) applications, as well as centralized support and professional services for operators to launch services quickly and grow.

The cornerstone of Irdeto SmartStart is the Java-based middleware platform, which allows operators to customize the end-user interface and easily add third-party applications. This foundation enables operators to build their own brands, react quickly to market trends, and ultimately deliver the enriching TV viewing experience that consumers desire.

# IRDETO SMARTSTART ADVANCED TV

## SUBSCRIBER SERVICES

- 7-Day electronic program guide (EPG) in standard definition (SD) or high definition (HD)
- Pay-TV subscription
- Pay per view (PPV)
- Search and find
- Banner
- Mosaic multi-screen TV display
- Extensive parental control
- Program reminder

## DISTRIBUTION

- Cable, satellite, terrestrial and DVB-over-IP networks

## REQUIRED SOLUTION COMPONENTS

- Irdeto Conditional Access (CA) System and Irdeto-approved set-top box
- Irdeto Java-based middleware platform
- Professional services and worldwide support

## OPTIONAL SOLUTION COMPONENTS

- Irdeto Customer Care and Billing (CC&B)
- Irdeto-approved third-party applications

## SOLUTION EXTENSIONS FOR IRDETO SMARTSTART

### PERSONAL VIDEO RECORDER (PVR) FOR IRDETO SMARTSTART

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#### SUBSCRIBER SERVICES

- Time-shift TV
- Instant recording
- Series recording
- Conflict management
- Remote booking

#### REQUIRED SOLUTION COMPONENT

- Irdeto-approved device with a hard disk

### VIDEO ON DEMAND (VOD) FOR IRDETO SMARTSTART

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#### STREAMED VOD

##### SUBSCRIBER SERVICES

- Movie store in SD and HD quality
- Catch-up TV
- Recommendations
- Search and suggest

##### REQUIRED SOLUTION COMPONENTS

- Irdeto Broadband solution for content management
- IP-connected set-top boxes, computers and mobile devices

#### PUSH VOD

##### SUBSCRIBER SERVICES

- Movie store in SD and HD quality
- Catch-up TV

##### REQUIRED SOLUTION COMPONENTS

- Irdeto Broadband solution for content management
- Irdeto-approved set-top box

# BENEFITS

## BEST-IN-CLASS AND RENEWABLE SECURITY

The Irdeto Conditional Access System provides a wide range of advanced security capabilities, and uses the Irdeto FlexiFlash technology to update clients over the air to renew security and add new features. Irdeto SmartStart can be deployed with both Irdeto smart cards and Irdeto Cloaked CA Agents.

## EASY AND FAST USER INTERFACE CUSTOMIZATION

Irdeto SmartStart provides a highly customizable user interface, allowing operators, with minimal effort, to create a consistent “look and feel” across different STBs and support multiple languages.

## FLEXIBLE YET POWERFUL CUSTOMER CARE AND BILLING SOLUTION

Irdeto Customer Central provides customer care and billing functionality, enabling operators to manage subscriber profiles, billing details and subscriber communication with ease. It also helps operators analyze subscriber data to identify opportunities for marketing campaigns.

## BUNDLED SERVICES FOR EASE OF DEPLOYMENT

### - USER INTERFACE CUSTOMIZATION

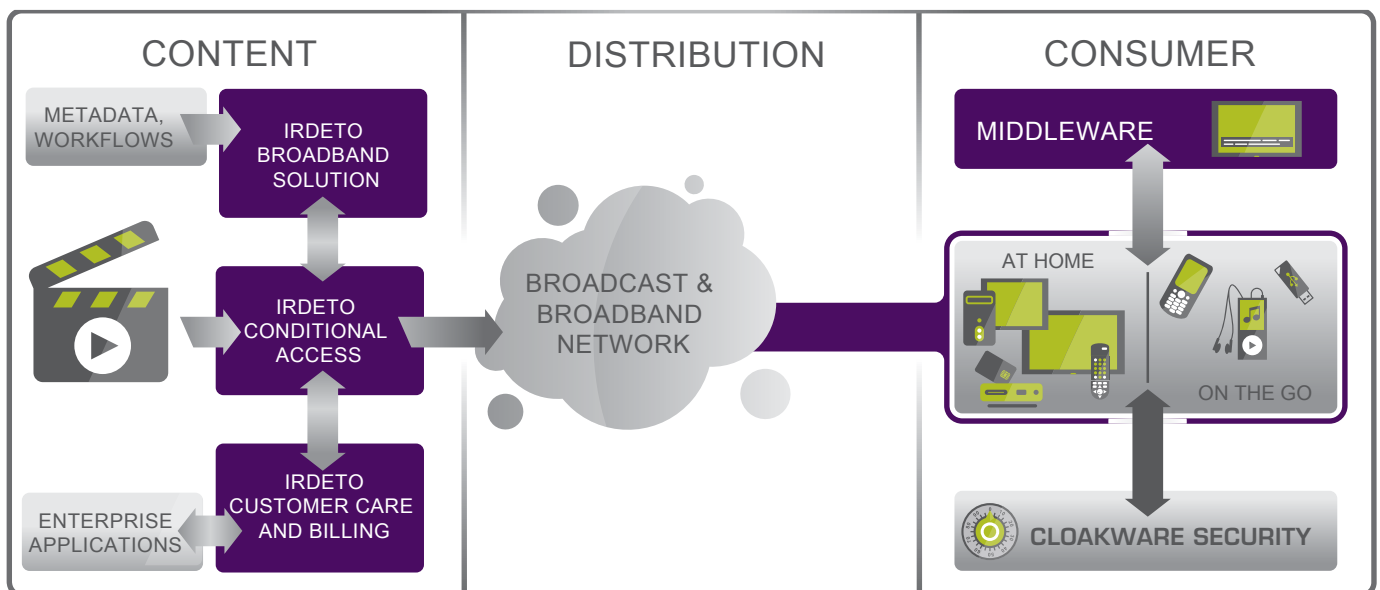
Irdeto helps operators customize the look and feel of the user interface based on their business requirements. For example, graphical objects, text, fonts, colors, button labels, drop-down lists and positions of on-screen elements can all be customized and previewed within minutes using the Irdeto middleware PC simulator.

### - LANGUAGE AND TIME ZONE LOCALIZATION

Irdeto SmartStart supports multiple languages, thus a localized user interface can be created to display the language and time zone of choice. A set of messages is created for each language displayed without changing the core solution, thus subscribers can easily change their language preference after the initial deployment.

### - SIGNAL ADAPTATION

Irdeto SmartStart supports free-to-air (FTA) networks and retail markets as they conform to the DVB standards. In some networks, signals broadcasted to user devices for service lists, such as TV channel or a radio station lists, differ from the DVB standards. To support these operations, Irdeto works with operators to adapt the scan mechanism used to build service lists in order to adapt to the networks.



# IRDETO SMARTSTART ADVANCED TV

FOR CABLE, SATELLITE, TERRESTRIAL AND DVB-OVER-IP NETWORKS

## A VARIETY OF SERVICES AND EXPANSION POSSIBILITIES

The solution enables many services, including:

- 7-Day electronic program guide in SD and HD quality
- Pay-TV subscription
- Pay per view
- Search and find
- Banner
- Mosaic multi-screen TV display
- Extensive parental control
- Program reminder
- Over-the-top (OTT) content streaming on set-top box

Other services such as games and interactive applications can also be easily added onto the Irdeto middleware platform.

## CREATING THE USER EXPERIENCE

To meet and exceed subscriber expectations in the competitive pay-TV market, operators must create an enriching end-user experience that allows subscribers to enjoy the content delivered in the best possible way. Irdeto SmartStart helps operators achieve this goal, because it is a complete pay-TV solution that is pre-integrated and optimized to deliver a high-quality end-user experience. It provides the following capabilities:

- **READY-TO-USE YET HIGHLY CUSTOMIZABLE INTERFACE**  
The interface is customized via a skin mechanism, without requiring any computer programming or changes to the core solution. Therefore, operators can create a consistent “look and feel” quickly across different STB platforms, and adapt it easily to meet ever-changing demands.
- **FULL 7-DAY EPG WITH REMINDERS AND OTHER POPULAR FEATURES**



Figure 1: Customized EPG with localized languages and time zones provides detailed program information and enhances subscribers' viewing and navigation experience.

- **EASE OF INTEGRATION WITH NEW APPLICATIONS**  
Third-party solution providers can use a PC-based development tool to develop and test applications with Irdeto SmartStart.
- **MOSAIC MULTI-SCREEN TV DISPLAY, ENHANCING TV CHANNEL OFFERING WITHOUT ANY HARDWARE COSTS IN THE HEAD-END**
- **MULTI-LANGUAGE SUPPORT**  
The head-end equipment supports multiple languages by default. The subscriber interface can support any language via the interface customization process.
- **FAST ZAPPING BETWEEN TV CHANNELS**
- **OVER-THE-TOP CONTENT STREAMING ON SET-TOP BOX**  
The Irdeto middleware platform supports the HTTP Live Streaming (HLS) protocol, enabling the operator to build an application on the set-top box to stream content over the top, using minimal bandwidth. This capability enables the operator to leverage content and services available on its or its affiliates' web sites.

## CORE COMPONENTS

- Irdeto Conditional Access System, with Irdeto smart cards or Irdeto Cloaked CA Agents
- Irdeto-approved set-top box
- Irdeto Java-based middleware platform, with electronic program guide, banner, Mosaic
- Professional services and worldwide support

## OPTIONAL COMPONENTS

- Irdeto Customer Care and Billing
- Add-on services, such as PPV, near VOD
- Irdeto-approved third-party applications



Figure 2: Third-party applications can be easily added to the Irdeto SmartStart solution to offer popular services such as games, news and weather.

# PVR FOR IRDETO SMARTSTART

## PERSONALIZED USER EXPERIENCE FOR TV VIEWING

The solution extension for Irdeto SmartStart supports STBs with local hard drives, enabling operators to offer many services, such as:

- Time-shift TV
- Instant recording
- Series recording
- Conflict management
- Remote booking

Operators can also customize the user interface to create unique branding and a consistent “look and feel” with minimal effort.

## EXCELLENT USER EXPERIENCE FOR POPULAR HOME USAGE

PVR for Irdeto SmartStart provides an intuitive set of features to ensure the best end-user experience. It includes:

- Full trick-mode support with smooth multiple playback speeds
- Time shift with intuitive jumping to live TV
- One-click recording during event viewing and from EPG
- Intuitive record booking interface with conflict manager
- Easy-to-find records due to automatic generation of thumbnails
- Series linking and series manager
- Automated hard-drive cleanup for new recordings
- Delayed compensation for fast forward and rewind
- Content locking
- Time-shift buffer across channel changes
- Repeat recording for conflicts and errors
- Event bookmarks for quick access to programs
- Parental control within multi-event recordings

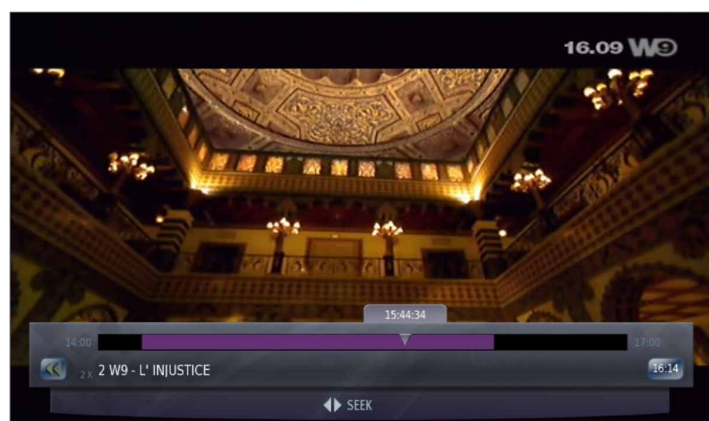


Figure 3: Subscribers have flexible time-shift viewing control, such as rewinding, forwarding, instant replay and instant jumping to live TV.

## ADVANCED CONTENT MANAGEMENT

Operators have full control over subscribers' rights to recorded content, thus preventing illegal copying. They can also implement secure chipsets in STBs to provide further content encryption.

- Complete management of recorded content with categories, key words and locks
- Flexible bookmarks manager
- Personalized playlists of recorded content
- Powerful, personalized content editing with copy/cut/paste
- Storage capacity management and recovery mechanisms



Figure 4: Subscribers can easily organize, edit and view recorded content.



Figure 5: A menu portal provides quick access to user services, such as Mosaic, EPG and content library.

## REQUIRED SOLUTION COMPONENT

- Irdeto-approved device with a hard disk drive

# VOD FOR IRDETO SMARTSTART

## TRULY ON DEMAND, TRULY UNLIMITED

This solution extension for Irdeto SmartStart allows operators and content rights owners to offer consumers virtually unlimited choices of entertainment. Consumers can now select from the latest movie releases or thousands of hours of archived programming, watch the video – with the ability to start and stop it - all from the comfort of their seat, on the device of their choice. Operators can offer many popular services, including:

### With streamed VOD:

- Movie store in SD and HD quality
- Catch-up TV
- Recommendations
- Search and suggest

### With push VOD:

- Movie store in SD and HD quality
- Catch-up TV



Figure 6: Content in the on-demand catalog is organized by a variety of attributes, such as channels, genres and “top 10 lists”, enabling consumers to easily find content of interest.

Operators can bundle content in any way and on the fly to support various business models, including pay per view, event packages or subscriptions, without having to re-encrypt the content.

## PERSONALIZED ON-DEMAND EXPERIENCE

The On-Demand Service Guide is the primary user interface included in VOD for Irdeto SmartStart, and is designed to provide a personalized and optimal consumer experience.

### - EASE OF CONTENT SEARCH AND RECOMMENDATION

The operator first organizes the content into channels, genres, categories, sub-categories and editorial lists such as ‘top 10’ or ‘latest releases’. Search can then be applied across the entire catalog or within a certain context. Content is searchable via a variety of descriptive metadata in multiple languages, and custom attributes can be added based on the operator’s needs. Examples of commonly used metadata include:

- Title
- Short or long description
- Content length or duration
- Box art
- Trailer or preview
- Parental rating
- User rating
- Actors or actresses
- Original studio
- Copyright
- Director
- Writers
- Genre
- Release year

When the subscriber is discovering available programs, the system can recommend certain titles based on the context. These recommendations are easily selectable to keep the subscriber engaged with the service and can be shown throughout the guide.

### - SECURE CONTENT CONTROL

Viewing access to content is controlled via rights-related metadata, including:

- Availability window
- Pricing
- Subscription or packaging details
- Region-specific information for regional blocking

This type of control is secure and flexible, ensuring that content is available only to intended subscribers and is easily managed even if the same content is bundled in multiple packages or services.

## CUSTOMIZABLE AND EXTENSIBLE INTERFACE

The operator can create a customized interface by changing the default colors, images and fonts based on its brand guidelines, in addition to having textual elements on screen translated into a language of choice. Advanced customization of the On-Demand Guide is possible using the concept of custom widgets.

The operator can also easily extend the user interface to access additional online services through Irdeto's support of the open RSS-TV XML interface ([www.rss-tv.org](http://www.rss-tv.org)). This approach makes it easy for the operator to add local services such as games, music services, and home security cameras. The user experience of these services will be consistent and thus intuitive across all media platforms, whether accessed from TVs, personal computers or mobile devices.

## ADVANCED CONTENT MANAGEMENT FOR ONLINE AND MOBILE DISTRIBUTION

The solution includes a powerful content management system for on-demand video assets to manage the full life cycle of content distribution, including ingestion, transcoding, publishing/workflow management, business policies and detailed usage reporting. It enables content rights owners to easily distribute video content to other platforms, such as to computers and mobile devices. Video assets are automatically transcoded to the appropriate format (e.g. MPEG-2/H264, MPEG-4, VC-1, Flash, or 3GPP) and protected using the appropriate DRM technology. The Irdeto content management system makes it easy to turn a web site into a premium video portal using any web development technologies including HTML, Adobe Flash and Microsoft SilverLight.



Figure 7: "Search and suggest" allows consumers to enter a partial name of a program or movie and see all potential matches.

### REQUIRED SOLUTION COMPONENTS

- Irdeto Broadband solution for content management
- For streamed VOD: Irdeto-approved device with IP connectivity
- For push VOD: Irdeto-approved set-top box

