

Submission of Views and Comments

To: Info-communications Development Authority of Singapore
8 Temasek Boulevard
#14-00 Suntec Tower Three
Singapore 038988

Attention: Mr. Patrick Pang
Deputy Director (NGN Programmes Office)

From: **Alticast Corporation**
Ryan H. Park
ryan@alticast.com
Tel : +82 2 2007 7692

Project NIMS Industry Dialogue on Outcome – Based Approach

Our Views and Comments:

Alticast has been a leader in this Java based Open standard middleware solution for the DTV and IPTV service market from 1999. We have been working with more than 20 nationwide TV service operators in Korea, Italy, Germany, Taiwan, Canada, and US market so far. 13 million STB have been deployed with Alticast Java middleware in the market.

Based on our 12 years of DTV and IPTV service experiences,

Alticast totally support the decision from NIMS project for the Outcome-Based Approach for defining IPTV service standard in Singapore service market.

Only considering the four (4) proposed outcome as below;

- (a) Multi-RSP Support
- (b) Common Application and Seervice Environment;
- (c) Embracing Options for Delivery; and
- (d) Carriage of T-Government Services

Service providers and solution vendors will be easily and conveniently approaching IPTV service implementation based on Standard requirement by IDA and MDA in Singapore market.

To implement common Featured STB for supporting multi RSP in the IPTV network,

STB middleware solution should be based on open standard and future extendable to additional platform based service on various devices.

It means that

1. The standard of IPTV service platform shall be defined by IDA and MDA as open standard based platform
2. The STB middleware solution will interface with IPTV Service Delivery Platform Headend Server based on defined IPTV standard supporting protocols.
3. But the STB middleware solution shall be independent from IPTV network to have future extend-ability by adopting new market required service platform solution such as web based Social networking services, Home networking solution, and other mobile based services.
4. For the differentiation of each RSP content service, each RSP can be able to adopt the most popular mobile platform OS solution, Android on its CF STB middleware. By additionally integrating Android platform on CF STB, any Android application content service can be running on TV and any NIMS IPTV content service will be available on mobile phone as well. Most IPTV subscribers will be more happily access and enjoy IPTV service on mobile phone anytime. As mobile phone users can enjoy same IPTV service on his or her mobile phone, there will be thousand of new business model and additional revenue stream based content service available to each RSP and mobile operators.

5. When delivering OTT, DVB-T service on IPTV network, OTT or DVB-T standard based EPG and data application service should be also running on CF STB smoothly. OTT is adopting IP based service, and DVB-T is adopting Java based MHP application and EPG service. By including Java middleware as an option on CF STB, DTT operator does not require to develop and provide two different versions of DTT EPG and IPTV EPG UI separately.

6. Delivering T-Government Services via IPTV network will be most helpful to TV viewer who has limited access to PC based government service information. But in other point of view, those T-Government Services should be delivered to mobile phone users who are instantly away from PC or Home TV and require T-Government Services information desperately. If mobile device can also receive same UI and content service as IPTV, it will maximize the service usability as IDA and MDA NIMS project expected.

For implementing above service requirement, CF STB middleware can be independent from network and shall be open and easy to adopt new platform base service requirement in the future.

Alticast Java middleware solution has been launched on Korea Telecom DVB-IPTV standard IPTV service platform in Korea. Currently it has 1,310,000 IPTV subscribers with Java based advanced service technology.

But for the preparation of new market service requirement in US, Europe, Asia including Singapore IPTV, **Alticast Java middleware has integrated OIPF Browser specification** for support HBBTV based OTT hybrid service in the market.

Current version of Alticast Java middleware has integrated with the browser solution which supports;

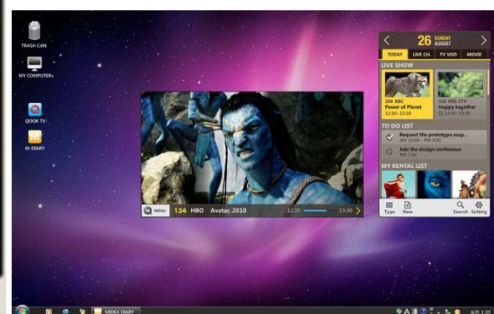
- ✓ **Partially comply with Volume 5 - Declarative Application Environment V1.1-2009/10/08**
- ✓ **Fully comply with HBBTV specification**
- ✓ **Compatible with OIPF Volume 6 Procedural Application Environment V1.1-2009/10/8**
- ✓ **RSP differentiate its application service by including Java based Android mobile platform solution**

Not only supporting **OIPF Browser** but also integrating **Flash player (Adobe ver.10) and Home networking (DLNA stack)** for the commercial level of IPTV service, Alticast Java middleware has been more powerful and extendable to adopt the most latest market service requirement as well as Singapore NIMS project requirement.

And also, Alticast implemented the **Android OS platform integration on our Java middleware**. By deploying NIMS CF STB with Alticast **Java + Android OS middleware solution**, any **Android mobile phone users** can also enjoy the same **UI and IPTV service content** as NIMS project IPTV service on their Android mobile phone in Singapore. Alticast is on trial service of Media Diary Application service with Korea Telecom IPTV by implementing Android integrated middleware solution.



[CF STB based IPTV]



[PC based IPTV]



[Android mobile phone based IPTV]

The benefit of integration the Android platform on CF STB of IPTV will be;

- ✓ **Each RSP can differentiate its service application and content by adding Android App store service content on STB TV.**
- ✓ **The same EPG and UI for IPTV content and VOD service can be provided on Android Mobile phone devices as well.**
- ✓ **N-Screen based Media Diary application service which shares same IPTV content service between CF STB TV and Mobile phone for continuous and seamless content watching can be available.**

Additionally, Alticast deployed and supported tru2way based T-government service in GangNam district area in Seoul with gangNam cable TV operators with 200,000 subscribers at the moment.

Summary of Alticast recommendation in terms of Middleware solution features:

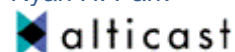
CF STB middleware solution for NIMS IPTV Project should be;

- *Non-proprietary* – CF STB middleware should be open for anyone to develop according to the standard.
- *Global in nature with more compelling content sharing with other operators and Mobile devices* – Supporting Browser based IPTV service is basic function. But by adopting Java middleware, NIMS IPTV operators can also enjoy most widely adopted Java based platform (DVB-T MHP, US Cable tru2way, GEM-IPTV, Android mobile platform) based service applications those are running in global TV and mobile App store service market.
- *Lower costs* – Reasonable royalty for STB middleware is necessary. Alticast offers most reasonable Java + Browser + Android middleware solution royalty price to Singapore IPTV operators market.
- *No vendor “lock-in”* – Headend platform, CF STB middleware, and STB hardware and STB client applications can be added or replaced by any other open standard based vendor solution.

Thanks for your attention.

If you have any inquiry regarding our service solution information together with its solution demo request, please contact me with my telephone or email.

Best regards,
Ryan H. Park



1328-3, 9th Fl. Nara Bldg. Seocho-dong,
Seocho-gu, Seoul, Korea
Tel + 82 2 2007 7692
Mob +82 10 5387 1357
Fax + 82 2 2007 8659
ryan@alticast.com