



Interoperable Set Top Boxes TRAI Questions and Verimatrix Responses

@ 2005-2019 Verimatrix
ALL RIGHTS RESERVED

Notice: No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or stored in a database or retrieval system for any purpose without the express written permission of Verimatrix, Inc.

The information contained in this document is provided AS-IS without warranty of any kind. Verimatrix reserves the right to make changes to this document and its implementation without any obligation to notify the recipient of this document. Nothing in this document shall create a warranty, either express or implied, and nothing herein shall alter the terms and conditions set forth in the applicable confidentiality, license, and/or service agreement(s) for use of the Verimatrix confidential information, products, or services.

All of the features described in this document may not be currently available. Refer to the most recent product announcement or contact Verimatrix, Inc. for information on feature and product availability.

Verimatrix, the Verimatrix logo, ViewRight, VideoMark, and StreamMark are registered trademarks and service marks of Verimatrix, Inc. Verspective is a trademark of Verimatrix, Inc.

All other trademarks, service marks, company names or logos are properties of their respective owners. Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. Verimatrix, Inc. assumes no responsibility with regard to the performance or use of these products.

Verimatrix
Impasse des Carrés de l'Arc
Rond-point du Canet
13590, Meyreuil
France

Table of Contents

Overview	4
About This Document	4
TRAI Questions and Verimatrix Responses	5

Overview

About This Document

The Indian government is currently seeking support from the players in the broadcast market in India regarding the options of standardizing set top boxes, in order to provide full interoperability across the content encryption systems of different CA vendors. The desired goal is to enable a retail market for set top boxes that can be used with any encryption system deployed across the country. The necessary, proprietary CA components shall be exchangeable.

Verimatrix is a vendor offering highly secure CA solutions for both one-way and two-way networks.

This document describes Verimatrix' view and recommendations regarding the interoperability of set top boxes.

TRAI Questions and Verimatrix Responses

Q-1: In view of the implications of non-interoperability, is it desirable to have interoperability of STBs? Please provide reasoning for your comment.

Answer: As a CAS vendor, we have always tried to provide as few lock-in as possible to operators. For example, we allow third parties to own the root keys of STBs so that another CAS vendor can make use of them in the case the operator wants to move on with another CAS solution. Also, we actively support standard based multi-CAS solutions such as DVB simulcrypt.

However, our experience has shown that built-in, full interoperability of STBs with any CAS and any middleware / user interface increases the costs of those STBs significantly. Also, supportability and maintenance typically suffer a lot from inhomogeneous platforms in a network, so that we strongly recommend weighing the benefits versus the cost-related disadvantages.

Q-2: Looking at the similar structure of STB in cable and DTH segment, with difference only in the channel modulation and frequency range, would it be desirable to have universal interoperability i.e. same STB to be usable on both DTH or Cable platform? Or should there be a policy/ regulation to implement interoperability only within a platform, i.e. within the DTH network and within the Cable TV segment? Please provide your comment with detailed justifications.

Answer: Does not affect CAS.

Q-3: Should interoperable STBs be made available through open market only to exploit benefits of commoditization of the device? Please elaborate.

Answer: Does not affect CAS.

Q-4: Do you think that introducing STB interoperability is absolutely necessary with a view to reduce environmental impact caused by e-waste generated by non-interoperability of STBs?

Answer: Even if STBs were interoperable, the assumption that such STBs would provide the full feature set for any operator's network can typically not be made. For example, the hardware performance might not be sufficient for advanced services etc. That is, subscribers with such STBs will likely have to go without many convenience features that only an operator-native STB can provide. In this case, the subscribers might still want to order a new STB when they change their content provider.

Assuming that operators and their networks typically grow over time, a good way to avoid e-waste is to digitally recycle STBs that are still functional, but not needed by a certain subscriber anymore. Our CAS solution allows for easy re-provisioning of such STBs for the case that they are to be sent to a new subscriber. We think that this is a better way for avoiding e-waste.

Q-5: Is non-interoperability of STBs proving to be a hindrance in perfect competition in distribution of broadcasting services? Give your comments with justification.

Answer: Does not affect CAS.

Q-6: How interoperability of STBs can be implemented in Indian markets in view of the discussion in Chapter III? Are there any software-based solution(s) that can enable interoperability without compromising content security? If yes, please provide details.

Answer: Chapter 3 in the TRAI document covers everything.

Q-7: Please comment on the timelines for the development of eco-system to deploy interoperable STBs for your recommended/ suggested solution.

Answer: It depends a lot on the targeted solution. For example, Common Interface Modules are directly available. The ETSI ECI proposal needs further investigation, also to which extent it can meet typical content provider and CAS security requirements.

Q-8: Do you agree that software-based solutions to provide interoperability of STBs would be more efficient, reduce cost of STB, adaptable and easy to implement than the hardware-based solutions? If so, do you agree ETSI GS ECI 001 (01-06) standards can be adopted as an option for STB interoperability? Give your comments with reasons and justifications.

Answer: We think it needs to be assumed that approaches like ECI will come with a significant increase in costs, because the performance requirements will be higher (running virtual machines etc.). Especially for low-cost STBs this seems not like an appropriate solution.

Q-9: Given that most of the STB interoperability solutions become feasible through a common agency defined as Trusted Authority, please suggest the structure of the Trusted Authority. Should the trusted authority be an Industry led body or a statutory agency to carry out the mandate? Provide detailed comments/suggestion on the certification procedure?

Answer: Trusted Authorities serve as a root of trust for all CA vendors' systems and all networks, e.g. by owning and distributing the root signing keys. Such a Trusted Authority would have to ensure that all sensitive, security-relevant information is being kept in a secure manner and only distributed to trusted parties who have a right and are trusted to receive it. Even the smallest leak of information could render the national Pay-TV market compromised as a whole, likely without any option to recover, as long as interoperability is maintained.

Q-10: What precaution should be taken at planning stage to smoothly adopt solution for interoperability of STBs in Indian market? Do you envisage a need for trial run/pilot deployment? If so, kindly provide detailed comments.

Answer: The precautions to be taken certainly depend on the chosen solution. This would need to be evaluated once it is known what interoperability approaches CAS vendors need to support. In any case we expect that many E2E and compatibility tests would need to be performed.

Q-11: Interoperability is expected to commoditize STBs. Do you agree that introducing white label STB will create more competitions and enhance service offerings from operator? As such, in your opinion what cost reductions do you foresee by implementation of interoperability of STBs?

Answer: As mentioned above we do not foresee cost reductions, but rather increase in costs: the reason is that all possible solutions come with significant hardware requirements that are not automatically met by low-cost STBs. Also, the operational costs will increase when operators have to support a broad range of 3rd party STBs.

Q-12: Is there any way by which interoperability of set-top box can be implemented for existing set top boxes also? Give your suggestions with justification including technical and commercial methodology?

Answer: The options for doing this depend a lot on how the affected STB models have been designed and implemented. However, our experience has shown that, in most cases, there is no economically reasonable way to achieve this because of too many technical challenges.

Q-13: Any other issues which you may like to raise related to interoperability of STBs

Answer: At this time none.