Dear Sir/madam,

Please find the comments below.

3.1 Is it possible to have an Open Architecture based Set Top Box (STB) for DTH services that could ensure technical interoperability i.e. technical compatibility and effective interoperability among different DTH operators who have adopted same or different standards?

Answer:
Since the standard specified for DTH operations is a globally accepted standard (DVB and DVB-S), there is no reason why technical interoperability cannot be implemented. Because the various interfaces between the different components of the whole system are well specified, any plug and play kind of scenario should be possible.
It is not necessary for the manufactures of CPE (customer premise equipment) to support each and every one of the standards used by all of the DTH providers, instead they can focus on groups of providers having similar technology and advertise that their equipment supports such providers. This decision of whether the CPE will support all possible providers or only a few will be decided by the manufacturers based on cost implications, any similarities in the technologies, demand from subscribers, etc. So one manufacturer may provide CPE which will work with all providers having DVB-S and MPEG-4 standard, another may work with DVB and both MPEG-2 and MPEG-4.

The benefit of open architecture is not just based on enforcing strict interoperability but in also allowing the subscriber to have a choice of vendors to buy CPE from. This choice may be based on cost or features or support of multiple provider standards.

3.2 If yes, how can the interoperability be implemented and what would be the implications to the stakeholders?

Answer:
The interoperability can be implemented by making all operators openly publish the technical standards that they are using in their system. Also, the operator must also publish how an equipment manufacturer can be compliant with them in terms of access keys or CAM modules. Similarly, the BIS standard can be changed to make CAM modules mandatory (Here again we run the risk of forcing technology which may become obsolete in the future). The providers must also publish the software specifications for third party manufacturers to effectively handle the Electronic Program Guide and such s/w required for DVR set top boxes. These can then either be upgraded in the box's firmware or put directly in CAM if technically possible; thereby negating the scenario where an STB can access the channels but not the related EPG data.

Since the providers are now also subsidizing the cost of the CPE, they can put the same discount available on their CAM modules in case of high cost of CAMs.

3.3 Is there a need to mandate any particular standard so that the objectives of technical interoperability can be achieved? If so, which standard?

Answer:
The mandate of the govt should be limited to ensuring rich competition and a good playing field, the particular standard should be left to technical advances and economic returns provided by particular standards. The decision of moving to a better and more advanced technology should come directly by the providers because they see economic benefit in moving to that standard. Since overall standards are only a few combination of DVB, DVB-S2 and MPEG-2, MPEG-4, it should not be difficult for the manufacturers to support all possible combination. Also, as all providers move towards more efficient standards, the manufacturers can cut cost by dropping those standards which are no longer supported by a lot of DTH providers. Also, in case where an operator wants to move to an advanced standard, it will be in its interest to make this information available to manufacturers and its client at a reasonable date.

3.4 If technical interoperability for STB is not possible, is there any other mechanism to safeguard the interests of the subscribers.

Answer: Currently some form of choice exists for the subscriber in terms of owning or renting the Customer Premises Equipment (CPE). However, once the subscriber has bought the CPE, it seals any chance of him recovering that money in case he decides to move to a different subscriber. It should be mandated that providers must have mechanisms to support direct sale of CPE from one subscriber to the other. This would mean the provider should support complete change of ownership to new subscriber and without any repercussions for the previous owner.

3.5 Any other relevant issue that you may like to mention or comment upon.
Answer:

1. While one of the direct benefit of a technical interoperability is the power of the subscriber to change the provider without losing his investment in CPE, it also allows economies of scale for pushing the cost of CPE down as now the manufacturers can create common pool CPEs which support multiple providers. Again the subscribers can benefit from having choice to buy CPE from lowest cost or highest features manufacturers. It also frees up the providers from creating and managing channels for hardware and after sale support as that liability will directly be picked up by manufacturers.

2. In light of TRAI recommendation of allowing the subscriber to choose each pay channel individually, it may be noted that allowing CAM modules to hold subscription information may be a way to implement that order. Hence there may be synergy in making the implementation of interoperability and a-la-carte selection of pay channels in similar time frames.

3. In case the technical interoperability comes in, there may be scenarios where operators want to advertise (or have tie-ups with) "preferred" vendors of manufacturers. To ensure that

monopolistic tie-ups do not hinder the choice of the consumer, the right of a manufacturer to create STBs for competitor operators must be protected.

4. In relation to proprietary nature of EPG in the current scenario, many providers may give example that without the EPG, the STB of provider A will be able to access channels of provider B, but cannot access the EPG of provider B. However, this is a false example, in case of mandated technical interoperability, there is nothing like a STB of provider A. The STB is white labeled. So if provider A wants "any" STB to access EPG, he has to publish the details in public.

Thanks,
Manu