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Federal Communications Commission
Office of the Secretary
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CG Docket No. 03-123 and 10-51

I am a senior network software engineer of 23-years with heavy insights on network protocol and security for Northrop Grumman. These comments are my reflection of my professional career in the specific software development area of network protocol and network security, and these same comments are not a reflection of my employer in any way.

Interestingly enough, I am also a deaf person who uses Video Relay Services (VRS) for my communication needs, every day.

My comments are given after each related questions which are reiterated for your reference:

Chapter I, section A, VRS Access Technology

Question 1: The Commission proposed to establish standards for iTRS Access Technology, including VRS Access Technology, in the *2011 VRS Reform FNPRM.14*

Would the process for establishing and maintaining standards discussed in the *2011 VRS Reform FNPRM* be appropriate for developing an application or establishing standards for an application?

Should the application or key components thereof be open source?

The application itself does not require being of open source nature in order to encourage competition for Commission's funds. The Commission would benefit from software being open-sourced to keep their development funding level at a minimum and such degree of open-source can be imposed in an incremental manner toward total open-source at Commission's discretion as the future demands it: But shall never lessen the degree of open-sourcing the software.

But, it is important to emphasis that the key component interacting or supplying information over the network protocol (Internet) SHOULD be of open-source, non-proprietary audio AND video algorithms.

The current H.323 protocol used in video conference does not lend itself well to auto-selecting algorithms correctly due to a certain but current vendor's proprietary algorithm; this is a danger of balkanization of end-user pool when such proprietary algorithm(s) get imposed separately by multiple vendor manufacturer or software supplier.

The Commission MUST emphasize toward vendors that vendors SHOULD BE encouraged to make available their proprietary algorithms under cross-patent agreements, NDAs, non-distributional rights and/or other suitable arrangement to ensure that such balkanization of consumer pool doesn't occur.

Be liberal in what you received, and conservative in what you send

Question 2: Should the Commission mandate use of a single application or allow development of multiple, interoperable applications? Who should be responsible for application development? For example, should the Commission develop, by contract, such an application? How should the developer of the application be compensated?

The Commission MAY emulate or even defer to the IEEE/IETF in establishing a committee for creating technical specifications. IEEE ByLaws are well-defined and orderly toward creating specifications, since its founding.

This comment submission is not the place to determine how to create this specification, but to point out that IEEE has demonstrated an excellent track record of defining well established specifications which are heavily reviewed by its technical peers as such specification work their way through working groups of technical peers toward maturation.

Once such network protocol specifications are established, the vendors are free to develop applications that work with this IEEE-like specification. This is historically evidenced and well-demonstrated by wide variety of commercial and free programs working within many IETF specifications (also called Request For Comment or RFC, which is its actual specification) of how to communicate over Internet. Some examples are e-mail clients, and other chat programs such as (Pidgen, iChat, IRC).

The responsibility of the application development should remain in the hand of the vendor and left to competition. Government has little benefit in directly engaging this aspect of application development.

3. Should providers be able to continue to offer their own internally developed applications? If so, under what conditions? For example, should there be an interoperability testing process? How would such an interoperability testing process be structured?

Providers can and should continue to offer their own internally-developed application, under one condition: It meets the soon-to-be-defined (IETF RFC?) specifications on how to communicate over the Internet.

Testing process SHOULD be bored by and largely conducted by the vendors themselves. The financial incentive of deferring to vendor self-testing is that it is an innate business sense to try for maximum interoperability. Failure to be interoperable would risk such vendor of being out-casted from future expansion; and failure to fix or comply with/to such specifications would exact a diminishing return of both market share and customer satisfaction.

Interoperability MAY be achieved if every vendor established a test call-back video phone number to allow such testing. The Commission can make available a list of all phone numbers from each vendors used for such call-back testing purposes.

4. Should the application be full executable, or a core executable or set of libraries (“core”) that can be customized by interested parties (e.g., using published APIs), or both?

If core, what key functions should this core contain, such as video encoding, video decoding and session signaling?

If core, should there be a certification process before calls placed with the application are compensable?

How should that process be structured?

Who should be responsible for maintaining and updating applications?

In the case of application being of full-executable (presumably to be of Intel x86 hardware), the Commission should encourage this file form (full-executable) for deployment to end-users whose platform are using Microsoft, Apple and Linux operating system.

Core executable or set of libraries MAY be used, but the modularity of “enhancement” functional problem is not easily resolved, nor encouraged, due to disparate use of dynamic library loading found across different operating system. The Commission should not impose a mandate on the topic of dynamic libraries, but instead leave it to the vendor to publish as market demands of it.

As a result of the above comment for question no. 4, no process structure and no responsibility for certification process would be required of the Commission.

5. What off-the-shelf hardware and operating system platforms should be supported? Should users be responsible for procuring their own off-the-shelf equipment, or should providers be involved in the acquisition and distribution of end user equipment to VRS users?

Commission should not impose a set of minimal hardware platforms. The thorny aspect of imposing hardware platform guideline is that often times, such a hardware platform comes with an incomplete or singular support of a single operating system.

If a vendor supplies a software-solution, then that vendor specify what operating system they support. It is normal for one vendor to support only Mac while other vendor supporting Windows. It is highly encouraged for the Commission to “encourage” Linux operating system, given that Linux system is “free” to download and easily used on the user’s choice of hardware platform.

If a vendor choses a hardware-solution, then it becomes a closed-system. All responsibility of interoperability and reliability falls on the hardware-approach vendors.

6. How should consumers be involved in the development, selection, certification and on-going enhancement of either the core or the application?

The word “consumers” should not be used by the Commission in reference to involvement of development, selection, certification, on-going enhancement. We call those Alpha or Beta testers.

The Commission should encourage vendors to solicit for beta-testers (who knowingly accepts all caveats associated with rough usage) to exercising and flushing out any flaws in their products.

7. How would users obtain support for issues relating to the application or its use on their equipment (e.g., network firewall issues, troubleshooting problems)?

Vendors should continue to supply HOWTO (web-site instructions), README (web-site general information), and provide community bulletin board in which customer can view answers posted by either the vendors' technical staff and/or customer-initiated resolution(s).

I am indifferent as to whether such a website would be vendor-oriented or Commission-run.

8. What other approaches might be considered to select an application or applications for use in the VRS system? For example, should the Commission host a competition among existing VRS access applications and/or commercial standards-based off-the-shelf video conferencing applications? What would be the benefits and drawbacks of these or other alternate approaches?

The problem with competition is balkanization of unusable VRS products, unless specifications of how to communication over the Internet is set in stone.

I would not advocate nor host competitive shoot-off at this early juncture while specifications have not been created. I would not use such shoot-off as a selection criteria yet, until (IETF RFC) specifications have been at least roughly outlined.

9. How would a transition to a VRS system that relies exclusively on a common application be accomplished, and over what period of time?

Using a well established By-Law that governs how specifications are written. One could use International Electrical and Electronic Engineering (IEEE), which often use their International Engineering Task Force (IETF) by-laws to conduct many working groups, one for each specifications.

While it is possible for a vendor to surge ahead and say we're migrating to this method. It would not be fair to the competitive field of vendors not being able to see what method is being used, unless a specification is spelled out clearly for all to see and comply with.

10. What changes in the Commission's rules would be necessary to adopt this proposal or one of the alternatives described above?

Defer to the IETF by-laws for creating specifications by establishing necessary Working Groups.

Thank you for reading my comment to CG Docket No. 13-123 and 10-51.

Sincerely,

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