



Scaleable Intelligent Video Server System

<i>Title</i>	Simula Switch Feasibility and Research Contribution Report – Complementaries FORTH & Simula
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[†] **CO** = Confidential (only for members of the consortium + EC); **RE** = Restricted to a stated circulation list (+ EC)
[replace this footnote with the list]; **PP** = Restricted to other FP6 participants (+ EC); **PU** = Public

1 SUMMARY

This document is a note comprising the inputs from FORTH and Simula to clarify the following comment from the Audit Report:

"The complementarities of FORTH and Simula research activities should be better clarified."

1.1 Comment from FORTH

Comment from Manolis Katevanis:

Regarding D5.3

"Simula switch feasibility and research contribution report":

Joan, you say:

"See comment report, work of Forth & Simula clearer.

"The complementarities of FORTH and Simula research activities should be better clarified."

(a)

I talked with Angelos: Since D5.3 deals with switches & networks, it is myself and not Angelos that is involved.

(b)

The comment report seems to suggest:

D5.3 is not "rejected", but the reviewers expect a new version of it (by month 28?)

The new version is to clarify one or two more items, plus explain complementarities of FORTH and Simula research activities.

Regarding the complementarities of FORTH and Simula research: as Thomas Sodring and myself agreed on the day of the review, this complementarity is crystal clear:

***** FORTH has worked on the internal architecture of each switching element (internally: a crossbar of various sorts), and SIMULA has worked on the ("external") architecture of multistage interconnection networks made of multiple switching elements.**

In my opinion, this is crystal clear, makes perfect sense, and shows full complementarity.

I do not see what more the reviewers need!

To conclude:

Have we delivered the new version of D5.3 (month 28?) ?

I believe that if Simula has clarified (or will clarify) the other

one or two items that the reviewers asked, and if Simula has clearly stated (or will clearly state) the above explanation on the complementarity, the reviewers should be fully satisfied!

I am available for any further comments,
with best regards,
Manolis.

1.2 Comment from Simula

Comment from Commission relating to D5.3:

Furthermore, the complementarities of FORTH and Simula should be better clarified

Thomas Soedring states the following:

The research efforts of both Simula and FORTH were directed towards supporting the original SIVSS architecture and must be viewed from that perspective. Simula created research plans for the 2 year timeframe that we participated in SIVSS.

Within WP5 Simula have studied and proposed novel solutions relating to issues of an Advanced Switching fabric that could be used in a high-performance network like SIVSS. In particular we have studied:

- **QoS issues relating to high-performance networks**
- **Congestion Management and QoS using a resilience algorithm**
- **Routing strategies in a network that SIVSS would have been likely to employ**
- **Deadlock issues in a network that SIVSS would have been likely to employ**
- **The development of a simulation model showing a MIN network capable of delivering 1 T bps.**

FORTHs research in WP5 focused on the performance of the TeraChannel (TC) switch and they described research effort on optimizing the buffered crossbar architecture by reducing the SRAM buffer size. They also built a hardware prototype platform and used it to (a) validate the buffered crossbar architecture, and (b) provide the network endpoint functionality needed for the software prototyping and measurements that were used in WP9 .

The research efforts of both FORTH and Simula do not overlap and complement each other through their role within a fabric. FORTHs efforts are local examining functionality within a single switch, while Simula looks at the global picture within the fabric. In summary FORTHs contribution lies in the development of novel switching architectures of a single switch as well as the development of analysis collection utilities, while Simula has contributed by analyzing interconnect issues when multiple switches are inter-linked in a fabric (as described above).