SAVE Specification and Verification of Heterogeneous Electronic Systems

# Use of IP in the SAVE design flow

## 1. Participants

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## 2. Moderators

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### 3. Purpose

The task was to identify issues of particular concern before commercially available IP can be incorporated in SAVE. Also, ideas and priorities of actions to resolve the issues was of interest.

## 4. Discussion

There will always be IP.

What is an IP?

There are many forms, but in SAVE the SoC view of IP should be investigated. Appropriate examples can be: CPU-kernels, memories, communication protocol handlers. The legal aspects of IP:s should not be addressed in the project.

The design flow prescripts that all models should be described in Haskell. Most likely there will not be many IP:s described in Haskell available. Maybe can Saab in the procurement of IP request that the supplier fulfils certain properties? That can be of help during the verification process.

Currently microprocessors can be handled. Other IP:s could be modeled in Haskell or possibly wrapped in some Haskell construct. When an IP written in another language than Haskell is included by wrapping, it is no longer possible to verify the model as with Haskell only.

Today it is possible to link C-code to Haskell but not VHDL.

One action for the future of the project could be to investigate the possibility to write a Haskell

### wrapper.

Another action is for the industry to provide the research team with a real world example of IP to further explore and reveal the technical problems. A challenging example should be chosen like a protocol interface unit or a filter.