Wrap-Up

Conclusions and Future Perspectives

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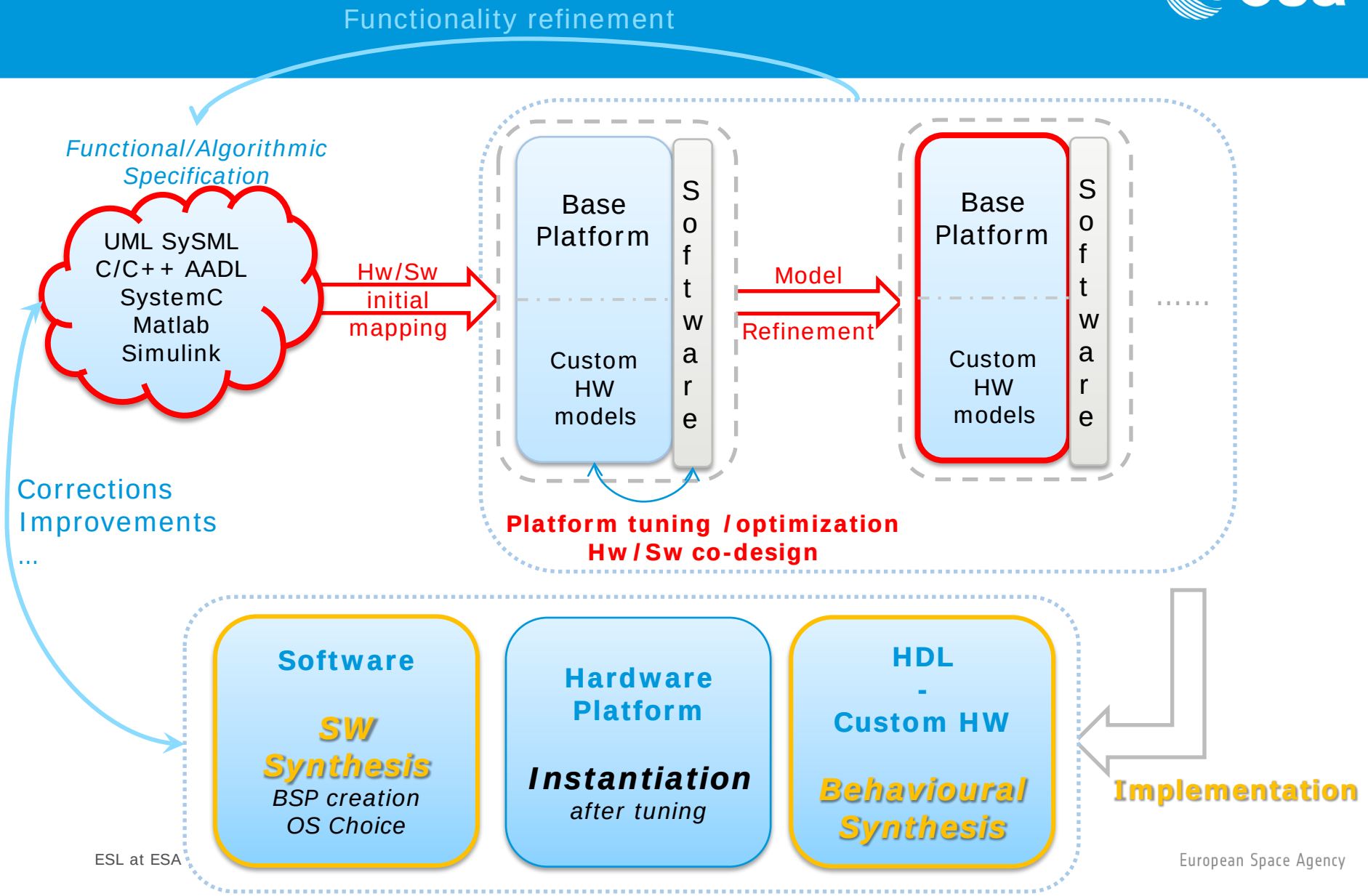
Summary: *the ESL Flow* at ESA



ESL: *benefits*

- ✓ Short design and development time
  - High re-usability, low impact of design problems, …
- ✓ Optimal design results
  - Optimal Hw/Sw partitioning
  - Optimal architecture configuration – drastic architecture changes can be easily performed when working at high abstraction levels
- ✓ Sw development can start concurrently with Hw design
- ✓ Simplified system maintainability
  - No need to delve in the low-level implementation details
- ✓ Easy cooperating among various departments / companies
  - By exchanging the high-level models of the system

……

And many more!

Future Plans and Challenges

- Tools to cover most of the steps of the ESL flow are already commercially available
- *The challenge is to make them **interoperable** to provide a **coherent design flow***
  - To favour *reuse*, *cooperation* among different companies, use of *IP Cores*, Platform Based-Design, etc. a reference flow needs to be put in place and compatibility with it guaranteed

- Future plans include:
  - Design of **SystemC models** and integration into a **Virtual Platform**
  - Integration of all the presented developments in a **coherent flow**
  - Bridge the gap between **hardware and software design**

- Reliability should be taken into account during the whole flow

Inputs for the Discussion

1) Are European companies willing to cooperate to build a common reference flow?
    - To be useful there must be exchange of information among companies, and possibility of design re-use
2) There must be a shift from the traditional design flow to the ESL one: is it worth in the space community?
    - Designs are much simpler than in the commercial market
    - No mass production
3) Does you company already have in place an ESL flow?
4) What is the best language for system specification?
    - SystemC, C/C++, UML, Matlab, Simulink, etc.
5) How can reliability be taken into account at high abstraction levels?
6) What are the next steps which ESA should take?