Co-Design at Chess-iT

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On the way

- Lot of literature on the field
- Called 'Co-Design'
  - "the system design process that combines the hardware ad software perspectives from the earliest stages to exploit design flexibility and efficient allocation of functions" (D.W. Frank).

Old timeline

- 3 weeks behind !
- 1 week ill
- Finding methods took long.

Week	Activity
46	Writing internship assignment, project plan.
47	Creating 2 abstract project requirements (scenarios) Finding 3 methods
48	A1
49	
50	
51	B2
52	(Holidays)
1	
2	A3
3	

Suggestion new timeframe

- 1 week less for A1
- 1 week longer (ill)
- Skip holidays
- Future: more talking with supervisors about schedule.

Week	Activity
51	A1
52	
1	B1
2	
3	A2
4	
5	A3
6	
7	Creating a second version of A1, B2, A3 or B1.
8	Extra week.
9	Writing thesis.
10	
11	

Co-Design

- **Heterogeneous vs. Homogenous**
  - Chess wants homogenous design methods
- **Computational Models**
  - (Co-design) Finite State Machines (CFSM)
  - Nondeterministic Finite Automata (NFA)
  - …many more. Will be a chapter in my thesis.
- **Level of ambition**
- **Synchronous/Asynchronous**
- **Data flow/Control oriented**

Selected methods

- Polis (language: Esterel)
- SDL
- ForSyDe (language: Haskell)

Polis

- Language: Esterel
- Lots of practical work done.
- Tools freely available
- Synchronous, based on CFSM
- Control oriented

SDL

- System Description Language
- Some practical work done.
- Don't have all the tools I want yet.
- Asynchronous, based on NFA

ForSyDe

- Language: Haskell
- Hardly any practical work done.
- Tools available
- Both synchronous & asynchronous (claims to be)
- Focuses on 'what' not on 'how'.

Methods I didn't choose

- CSP, μCRL
  - Not practical enough (no synthesis)
- SystemC, HandelC
  - Not ambitious enough, too low level.
- IOA
  - No codesign. Synthesis immature.
- UML
  - No execution. However, can be combined with SDL perhaps.

Steps now

- Describe scenario(s)
- Start with Polis/Esterel.