Followup of VP 2012 – 2016

1. Important issues

What issues remain since last year? What are the reasons that they remain and what are the consequences?

Here are the goals from VP2 of 2011, with comments.

- *Win funding from AoA Energy.* Some funding became available for CSE, but it went to Marina Papatriantafilou at NS (no objection from CE).

- *Win funding for EuReCCA.* ACCENT and EuRITCA proposals have been developed / are underway for this mission.

- *Refinance students with expiring external funding.* The SCHEME project finances two pre-existing students, who would otherwise be on faculty funds. Still 4 students are unfunded; of these, Tung Hoang and Erik Sintorn plan to graduate in the beginning of 2013.

- *Launch and evaluate new MSc courses.* In general, the launches appear to have been successful. DAT116 replaced DAT100 and DAT115 and got an overall score of 3.71, with only two students not passing. DAT275 was followed mostly by PhD students; it was decided to make it a permanent course. DAT096 replaced DAT095, the major change being the introduction of individual grades. Adjustments will happen but no major re-work seems to be indicated at this point.

- *Increase staffing at Lindholmen.* Arne Linde and Lennart Hansson are now mainly at Lindholmen.

- *Introduce realistic models for teaching costs.* Model developed and supplied to accounting unit.

- *Offer at least one public lecture on ”Nyttiggörande för ett hållbart samhälle”.* Not yet done.

- *Launch industry courses through Chalmers Professional Education.* CPE planning includes multicore courses, but not already for this year.

- *Have a division retreat in the spring.* Retreat turned into a one-day faculty workshop.

- *Map leadership education requirements, and make personal plans if necessary.* Not done yet.

- *Improve gender balance.* Two female PhD students and one female faculty member gained by reorganization.

2. Context and strategy

Has something changed for 2013? What are the consequences?

- Real-time-and-dependable group has (re)joined CE managerially, but not yet economically. The consequences for division bottom line have not yet been analyzed, but the teaching side should be helped by EDA122 and EDA222.

- The DoD + MoP courses are now clearly in the CE domain, so the responsibility for the lab equipment development project rests with us.

VP 2013 – 2017

1. Strategy

Division assessment of the most important issues and goals for CSE for the next 5 years (prioritized):

- Curriculum development to ensure that hardware design and computer architecture do not go extinct.

- Improved transparency of division and department economy.

- Laborational activities need increased emphasis, both for courses and thesis projects / research. Here are some issues:

  - Course lab maintenance has not yet settled in the post-Kollberg era. (This is an urgent issue which will require recruiting a tech support person. See below.)

  - Continued development of course lab equipment for the DoD + MoP courses. These are large volume courses with traditionally very good evaluations.

  - Development of a strategy for in-house experimental/practical thesis projects. Infrastructure development should be considered.

- A stable staffing situation for the SE division.

2. Trends and environment

Are there new or existing research areas that should be developed? If so, what are the opportunities for funding?

- With recent recruitments (Ioannis Sourdis, Georgi Gaydadjiev) and with the RT-Dependable group joining the division, we see several possibilities for developing internal strengths. EU funding for reconfigurable computing and a project with RUAG for predictability in multicore scenarios suggest that funding will be possible to find. On a slightly longer time scale, we see the necessity of teaching hardware/software co-design in more depth than is done now, which would seem to require research activity to maintain quality. This development is already underway in the vehicular area with AUTOSAR as a focus.

What is the likely evolution of external funding over the next 5 years? Who are the important sources for funding?

- Most of the division research seems to have bright prospects for external funding. Upcoming SSF calls seem to fit very well with the division profile. A persistent effort in the EU arena has paid off handsomely, especially for the computer architecture-related research. Funding levels for "pure" microelectronics will likely not increase. Wide multidisciplinary consortia seem to be key to win the large projects and grants. Equipment donations should also be counted as external funding and may be used as a base for infrastructure development, as mentioned above.

Does the division require strategic funding from the department? If so, for what purpose, and what would be gained?

- Possibly for recruiting female faculty/staff and/or PhD students if opportunities arise, or exceptionally for recruiting a very highly qualified person. We have also mentioned, at the first point above, some lab equipment issues that may justify CSE investment.

Should any research areas be wound down? If so, do we foresee redundancies or can we extend the competence of those affected?

- No.

How does the division relate to the Areas of Advance, now and in the future?

- AoA ICT finances part of Ioannis Sourdis, and Johan Karlsson has funding from AoA Transport. There is a clear potential for working with EScience, Energy, and Materials (the Graphene initiative), but no direct activities at this point.

How does the division relate to centres (such as the Software Centre), now and in the future?

- We would like to work more with Software Centre but have yet to find the forms for doing so. We expect the EuReCCA effort to have many of the characteristics of a centre once it gets in place.

How does the division contribute to societal goals?

- Our research involves many societal issues; two major ones are highway safety and power-efficient computing. Faculty members are active in the public eye (radio, television) and in schools. The school efforts could be gathered up and coordinated, maybe across the department.

3. Personnel

What do we foresee about our future personnel requirements (rising, stable, shrinking)? If possible, specify seniors vs. students, and mention if international or local recruiting is desirable.

- Near-term retirement of several teachers requires redistribution of courses (already in 2012, five course instances are taught by teachers of age 65 -- including MCC091, taught by Kjell Jeppson of MC2 but likely a CE responsibility in the future).

- When recruitment can be financed, international recruiting will tend to be more competitive and is preferred. The requirement to teach Lindholmen and freshman

Johanneberg classes in Swedish presents an extra constraint. We need to monitor the course volume closely to ensure that we can fulfill these requirements.

- As mentioned above, we will need to recruit a tech support person as soon as is practically possible. The present lab systems for the DoD + MoP courses will need to survive for still a few years while the next generation of lab equipment is developed and deployed. Ole Ravnsborg reaches retirement age just about when this replacement should be complete.

Will the division need to recruit full-time teachers?

- This strategic question was brought up in the division faculty workshop and met with a resounding NO. Thus, as several full-time teachers approach retirement, it appears that the current teachers will need to be prepared to teach more, as a junior teacher/ researcher will cost the same as a full-time teacher but handle fewer courses.

What is the division strategy for recruiting female researchers?

- No explicit strategy at this point. We could make a point of keeping track of promising young faculty and invite them here even before there is an open position. Then again, in that case we should do that for men too.

Provide an assessment of future promotions, and mention whether someone will need support to assemble the Pedagogical Portfolio.

- Detailed planning of when a person may be promoted is difficult. With this reservation, we expect Ioannis Sourdis to qualify for Docent status within at most 2 years. Sally McKee should apply for promotion to Biträdande Professor. Ulf Assarsson was promoted to Docent in 2009 and should start planning when to apply for Biträdande Professor. (Support for assembly of Pedagogical Portfolio will be gratefully accepted.)

4. Excellent work environment

How many of the division employees have taken part in the CSE Coworkership Project?

- Currently 3. 2 more scheduled for the second round this fall.

How many of the division advisors have taken part in Handledarforum?

- 10 out of 11, once the current batch is done.

If necessary, provide a plan for how those who have not yet taken part in these projects can do so over the next 12 months.

- Handledarforum is closing down after this upcoming iteration, so we have no plan for 2013 and beyond.

- At the end of 2012, 5 out of the 16 faculty/staff + 2 postdocs will have taken part in the Coworkership Project. If we are to send 2 per iteration, we need around 6 more iterations in the next 12 months. Also, at least 5 (3 faculty + 2 postdocs) will need to be in an English session, so three of the sessions need to be conducted in English. We need dates for all these iterations ASAP to make it possible to plan for this.

5. Quality assurance

What are the overall scores of the division courses? Does the division actively follow up any issues here?

- 3.91 over 28 courses (latest values used, unweighted for number of students, some manual intervention applied). More than half of the courses score better than 4.0. There are a couple of outliers that will be followed up.

What is the overall quality of division publications? How can it be assessed? Does the division actively follow up any issues here?

- There is no active management followup at the moment; we rely on the academic peer-review system and on individual researcher desire for CV improvement etc. We practice some collegiate cross-reading of submissions for some high-impact conferences.

- It is important to avoid the appearance of "second-guessing" the individual researcher when it comes to published works. The D&IT faculty kollegium is currently discussing how to "rank" different publications. Once such a ranking is complete, researchers may use it to decide where to submit their work. "Ranking points" could presumably be used in performance assessments and salary revisions, based on a clear policy directive.