Paral-ITP Front-end Technology

(based on Prover Architecture and Document Model)

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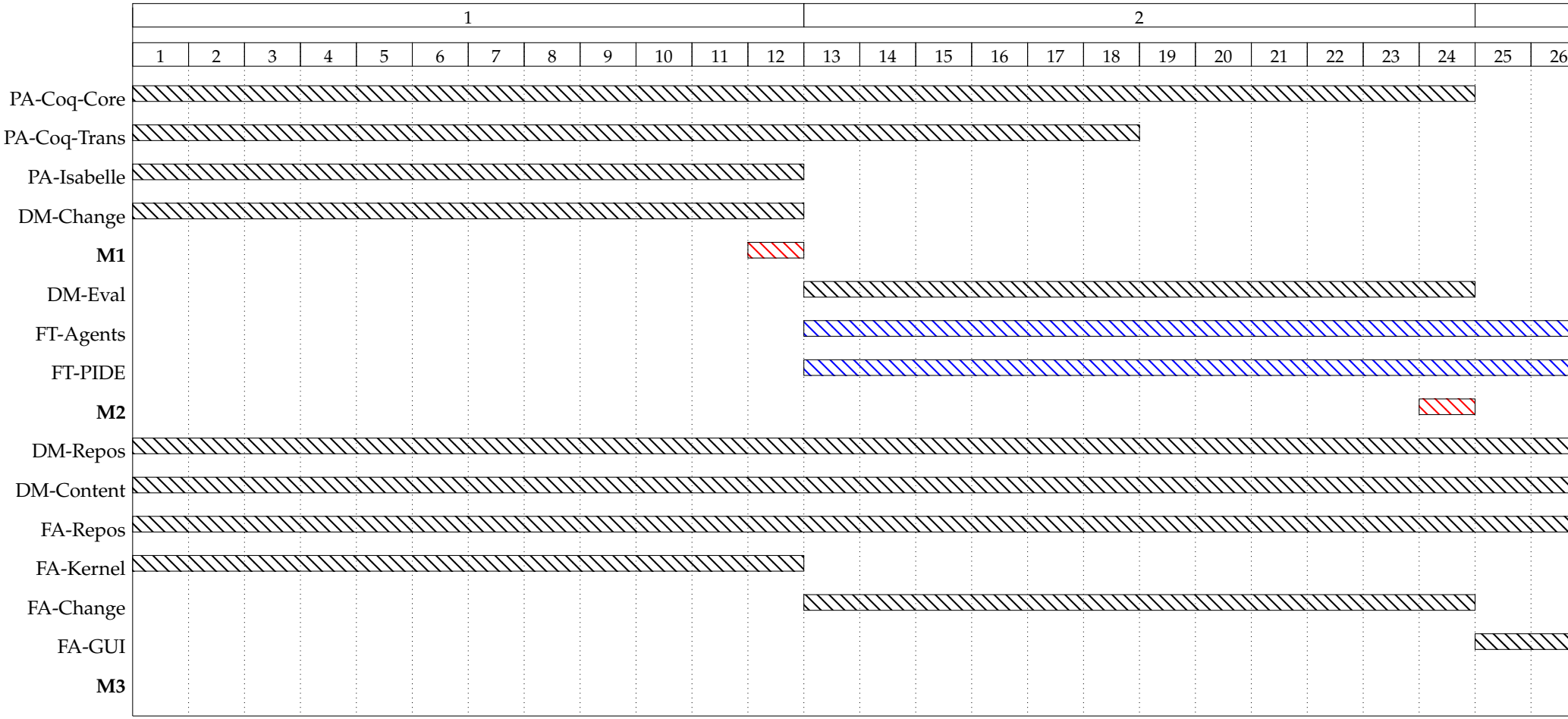
May 2012

Project **Paral-ITP** meeting

ANR-11-INSE-001

Le Grand Plan



Papers

- M. Wenzel and B. Wolff. *Isabelle/PIDE as Platform for Educational Tools.* Workshop on Computer Theorem Proving Components for Educational Software (THedu 2011). EPTCS volume 79, 2012.
- M. Wenzel. *Isabelle/jEdit — a Prover IDE within the PIDE framework.* In J. Jeuring et-al, editors, Conference on Intelligent Computer Mathematics (CICM 2012). Springer LNAI 7362, 2012.
- M. Wenzel. *READ-EVAL-PRINT in Parallel and Asynchronous Proof-checking.* Submitted to UITP 2012. May 2012.

Software Releases

- Isabelle2012 (May 2012): rolled out before the end of the month
  http://isabelle.in.tum.de/website-Isabelle2012-RC2
  - fully-integrated Prover IDE (Isabelle/jEdit)
  - improved support for add-on tools (Sledgehammer etc.)
  - improved Windows integration (self-extracting 7zip installer, Launch4j application, bundled Cygwin, bundled JDK)
  - smart download button on front-page
- PIDE/Scala library as projection from Isabelle repository
  https://bitbucket.org/pide/pide-repos
  - Useful? Realistic?
  - Subject to Isabelle license!
- XML/YXML representation of ML values (simple, efficient)
  https://bitbucket.org/makarius/yxml

Technological Side-conditions

- Scala 2.8.1 $\longrightarrow$ 2.9.2 $\surd$
  (experimental support for 2.10 RC)
- jEdit 4.4.1 $\longrightarrow$ jEdit 4.5.1 $\surd$
  (now supports UTF-16 ouside BMP, e.g. $\mathcal{A}$)
- Java 1.6 $\longrightarrow$ 1.7 not yet
  (pending issues concerning Mac OS X)
- Interesting option: JavaFX 2.x (included in Java 1.7 distribution)
  - native HTML5 Webkit
  - SVG support
  - multimedia gimmicks (2D, 3D)
  - e.g. see http://www.slideshare.net/steveonjava/moving-to-the-client-javafx-and-html5

External Contributors

David Matthews, Edinburgh:

- continued efforts to improve multicore scalability of Poly/ML, notably parallel garbage collection (relevant for PA)
- more Windows support, potentially for MinGW 32/64 soon

Lukas Bulwahn, Munich:

- Student project to re-implement Isabelle graph browser for PIDE, based on Scala and JUNG framework
- Failed due to architectural problems of JUNG

Christoph Lüth, Bremen:

- Master project since April 2012, with Isabelle/Scala and Play framework (Web front-end)

TODO

- from bottom: Coq participates in Scala integration layer
  $\rightarrow$ more people getting acquainted with Scala/JVM technology
- from top: more applications, e.g. by early adopters out there
  $\rightarrow$ more student projects
- administrative side-conditions:
  - reliable OSS licensing, to accomodate existing situation of Coq and Isabelle
  - software-technical organization of sources and repositories