LDV-CPAchecker

- CPAchecker improvements
  - BAM for explicit-itp [karlheinz+pavel]
    - precision collection
    - repeated counterexample
      - BAM COW evaluation
      - Evaluate: Remove unused tree from cache, refcnt clocks?
    - alloc functions
      - Evaluation required
    - Code coverage broken [karlheihz]
  - Pointer analysis
    - Const optimization
    - bulk assignments
    - Region inference
    - Pointers as pairs
    - Combination results with explicit analysis (LDVExplicitPredicateExperiments)
    - alias analysis
    - ~~arrays instead UFs~~
      - Evaluate for LDV
    - Explicit function pointers [koloskov]
  - WitnessVisualization
    - ExtendedWitnessFormat for visualization
    - Option in CPAchecker to generate extended witness format
    - Refactoring of CPAchecker WitnessWriter
  - Memory Safety [anton+alexander]
    - Optimization (+)
      - Merge required
      - Further optimization
    - User-friendly error traces (+)
      - Merge required+Witness format
    - Array abstraction
    - CEGAR SMG (-)
    - SymbolicMG
  - CPALocator
    - multithreaded witnesses [pavel+karlheinz+matthias]
      - Witness checker required!
    - Theory
    - Design merge strategy
    - Deadlock detection
    - Reachability in multithreaded way
  - CIL-less CPAchecker
    - timeout regression [vadim]
      - CIL transformation analysis
    - other open issues
    - LLVM-based optimizations
  - Specification Automaton [andreas+vitaliy]
    - Automaton Extensions
      - Merge required
    - Maps/Sets
    - rerouting
    - Environment Automaton
    - MPV (muauto) [vitaliy+philipp]
      - Refactor&Merge required
    - MAV (cmav-2)
      - Refactor&Merge required (Visitor)
  - CPAchecker Cloud
    - Cancelling tasks
  - Merge error visualization tools?
  - Assumptions made in analysis
    - Finalize witness format proposal
  - Scope-bounded verification
    - data flow driven pruning
      - Slicing [mikhail]
    - summary generation
      - null-summary [anton, petr]
      - Other summaries
  - lazy predicate abstraction [mikhail]
    - Merge required (LDVExplicitPredicateExperiments)
  - Statistics [ilja+dirk+philipp]
    - no statistics at all
      - autocollection
    - more values
    - hierarchical values
    - tools for analysis
    - ~~location based visualization~~
- Experiments
  - Prepare test data for memory graphs
    - memory safety
    - list specification
  - pointer-heavy specifications/environment
  - Configurations experiments
    - Sequential combination [postponed]
    - bitvector for counter-example only
    - ~~k-induction [ilja+matthias]~~
  - Complex Specifications
  - Multiple Properties Verification [vitaliy]
  - Multiple errors at the same time (?)
    - unsat core
    - interpolants
    - interpolants+flow
  - Reusable precision
    - hints from specification
    - hints from envgen
    - different versions
    - different architectures
    - different configurations [svyatoslav]
    - Reuse precision for library modules [ilja+andreas]
  - pruning CPA
- Misc
  - MultiProperty BenchExec [vitaliy,philipp]
    - ~~BenchExec in LDV tools~~
  - Common API for verifiers' options [philipp+evgeniy]
  - use automata
    - hints for guiding exploration