

PROJECT FLOWCHART

	Year 1 (June 2022-May 2023)				Year 2 (June 2023-May 2024)				Year3 (June 2024-May 2025)				Year 4 (June 2025-May 2026)			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
WP1 - Program Synthesis via Classical Provers																
Task A.1																
Task A.2																
Task A.3																
Task A.4																
Task A.5																
WP2 - A Program Synthesis System for Vampire																
Task B.1																
Task B.2																
Task B.3																
Task B.4																
Milestones																
M1																
M2																
M3																
M4																

Short description of Tasks

Task A.1: Designing a calculus with control structures suitable for program extraction from Vampire proofs

Task A.2: Establishing under what conditions non-constructive applications of control structures can be eliminated

Task A.3: Collecting characterizations of specifications for which constructiveness of the extracted program can be guaranteed

Task A.4: Examining transformation procedures for input specifications

Task A.5: Evaluating the applicability, robustness and potential shortcomings of the developed mechanisms

Task B.1: Implementing the findings of WP1 into a software system

Task B.2: Utilizing syntactic context for improved proof search

Task B.3: Extending the system to restricted specifications, e.g. input/output pairs

Task B.4: Extensive testing and benchmarking

Milestones:

M1: Extraction of constructive programs from classical proofs

M2: Classical provers for program synthesis via modified specifications

M3: Fully working implementation of theoretical findings

M4: A usable system for program synthesis built on top of the Vampire theorem prover

Staff:

Florian Zuleger (PI)

PhD1 (Alexander Pluska, 48 months)

PhD2 (N.N., 48 months)

PostDoc (N.N., 24 months, year 3-4)

Workplan:

The PI Florian Zuleger will be involved in all tasks and lead A.5, B.1, B.4

PhD1 will lead tasks A.1, A.2 and be involved in A.1,A.2,A.5,B.1,B.2.,B.3,B.4

PhD2 will lead tasks A.3, A.4 and be involved in A.1,A.3,A.4.,A.5,B.1,B.4

PostDoc will lead tasks B.2,B.3 and be involved in B.1,B.4