COST action CA20111 EuroProofNet

Summary of the first grant period

Nov 21 - Oct 22

Frédéric Blanqui

Core group composition

chair: Frédéric Blanqui (France)
vice-chair: Sandra Alves (Portugal)
communication: Ornela Dardha (UK), Dmitriy Traytel (Denmark)
grants: Danijela Simić (Serbia), Ambrus Kaposi (Hungary)
training: Luigia Petre (Finland), Marija Mihova (North Macedonia)
gender-balance: Anja Petković Komel (Slovenia)
WG1: Jesper Cockx (Netherlands), Catherine Dubois (France)
WG2: Pascal Fontaine (Belgium), Alexander Steen (Luxembourg)
WG3: Alicia Villanueva (Spain), Rodica Condurache (Romania)
WG4: Claudio Sacerdoti Coen (Italy), Gilles Dowek (France)
WG5: Cezary Kaliszyk (Austria), Peter Koepke (Germany)
WG6: Benedikt Ahrens (UK), Roussanka Loukanova (Bulgaria)

young 45%   women 45%   ITC 32%

Countries represented in the MC

submission: 12 ITC + 12 non-ITC = 24

$\longrightarrow$ **now**: 17 ITC + 17 non-ITC = **34** (+10!)

- ▶ +6 ITC: Albania, Georgia, Greece, Lithuania, Slovakia, Turkey
- ▶ +4 non-ITC: Finland, Ireland, Israel, Switzerland
- ▶ Luxembourg moved from ITC to non-ITC

missing ITC: Bosnia and Herzegovina, Cyprus, Latvia, Malta, Moldova, Montenegro, Ukraine

⇒ if you know colleagues in these countries, please contact them!

ITC = Inclusive Target Country

Working group members (statistics on Oct 21)

members	301	
young	158	52%
women	60	20%
prefer not to say	10	3%
ITC	63	21%
non-ITC	218	72%
non-COST	20	7%
WG1	97	32%
WG2	114	38%
WG3	152	50%
WG4	122	41%
WG5	80	27%
WG6	140	47%

Non-COST: Kosovo, Argentina, Brazil, Mexico, Singapour, USA

Countries with more than 2 members

Country		
France (FR)	41	14%
United Kingdom (UK)	33	11%
Italy (IT)	27	9%
Germany (DE)	26	9%
Spain (ES)	17	6%
Netherlands (NL)	14	5%
Denmark (DK)	13	4%
Sweden (SE)	13	4%
Portugal (PT)	11	4%
Serbia (RS)	11	4%
Belgium (BE)	10	3%
Austria (AT)	9	3%
United States (US)	8	3%
Romania (RO)	6	2%
Czech Republic (CZ)	5	2%
Hungary (HU)	5	2%
Israel (IL)	5	2%
Switzerland (CH)	5	2%
Norway (NO)	4	1%
Poland (PL)	4	1%
Turkey (TR)	4	1%

Ask the colleagues and students of your country to register!

Communication (statistics on Oct 21)

web site https://europroofnet.github.io/ (70 pages):
news, events, grants, publications, tools, schools, job offers,
conferences, teaching, gender balance, working groups, research
groups, related projects, contacts

documents/slides (71), **videos** (18), photos (46)

Zulip chat (207 followers) for discussions

Facebook (17 followers) and **Twitter** (81 followers)

articles in the news by Alicia in Spain and Frédéric in France

Short-Term Scientific Missions (STSMs)

planned 20% of budget $=$ 22000

3 calls: January 6, April 6, July 5

20 submissions, 17 accepted, 1 not reimbursed (missing report)

final cost 22542, diff $+542$

average 1409 euros/STSM, 10 days/STSM

Events

Event	City	Days	Date	Onsite	Online	Total
WG3 meeting	Valencia	2	Feb	15	38	53
WG6 meeting	Stockholm	2	May	42	0	42
WEPN & Dk school	Nantes	2	Jun	40	2	42
WG2 meeting	Haifa	1	Aug	40	10	50
VTSA school	Saarbrücken	5	Sep	37	0	37
WG5 meeting	Aussois	4	Sep	54	0	54
Sonalf school	Bonn	5	Sep	0	0	0
WG4 meeting	Tbilisi	2	Sep	19	28	47
Dk dev meeting	Val d'Ajol	3	Oct	12	0	12

Budget

event	planned	final	diff
STSM	22000	22542	542
WG3 meeting	5500	2331	-3169
WG6 meeting	7970	7788	-182
WEPN & Dk school	24750	17649	-7101
WG2 meeting	7800	8088	288
VTSA school	11900	12598	698
WG5 meeting	18600	17049	-1551
Sonalf school	10100	0	-10100
WG4 meeting	0	9850	9850
Dk dev meeting	0	7636	7636
TOTAL	108620	105532	-3088

125 grants and travel reimbursements

Goals of Nov 21 - Oct 22

1. Advertise EuroProofNet to the different communities working on proofs
$\longrightarrow$ MC+10 countries, 301 members, WG min 80 - max 152

2. Provide to all proof system developers the necessary knowledge to be able to encode the logic and proofs of their system in Dedukti and start writing a translator from their system to Dedukti
$\longrightarrow$ Dedukti school

3. Provide to young researchers the necessary knowledge to be able to produce detailed, checkable proofs by using theorem provers, and to understand the differences between different proof systems and the key characteristics for a good combination with formal automatic verification techniques
$\longrightarrow$ VTSA school

Goals of Nov 21 - Oct 22

4. Evaluate the techniques for learning proof search guidance and premise selection in automated theorem provers
$\longrightarrow$ WG5 meeting

5. Teach how to formalize mathematics in the Naproche system, what is its underlying linguistic theories and techniques, and its type theory
$\longrightarrow$ postponed to 2023

6. Identify verification techniques used in the Software Verification competition SV-COMP and start the analysis and characterization of the different approaches
$\longrightarrow$ postponed to 2023

Goals of Nov 21 - Oct 22

7. Build an inventory of works on type theory, evaluate the existing works towards usability as the basis of an implementation, and create a roadmap towards an implementable theory of type theories
$\longrightarrow$ WG6 meeting

8. Write the Progress Report 1 on the compliance to the COST policy, and the work plan and budget for the second grant period
$\longrightarrow$ done

9. Identify concept alignments between different implementation of the same mathematical objects
$\longrightarrow$ postponed to 2024

Goals of Nov 21 - Oct 22

10. Present and discuss the possible gender balance issues and subconscious biases that may occur in computer science and, more specifically, in the field of logic and proof
⟶ Women in EuroProofNet

11. Help action members to work together on the challenge and research coordination objectives of the action
⟶ STSMs and meetings

12. Start the inventory of automated theorem provers producing proofs, description of proof formats, and inventory of checking tools for these proof formats
⟶ https://github.com/EuroProofNet/ATP/wiki

Deliverables

For nov 21 - oct 22, only one deliverable was planned:

> Database gathering proofs from the proof systems
> Coq, HOL-Light and Matita, and their translations.

What has been provided?

- ▶ The website `http://logipedia.inria.fr` provides an arithmetic library coming from Matita and its translation into 5 other systems: Dedukti, Coq, Lean, PVS and OpenTheory.

- ▶ `https://github.com/Deducteam/nubo/` is a repository of translations to Dedukti of libraries from various systems: Matita, Focalize, Coq, OpenTheory, iProverModulo, Isabelle/HOL, VeriT, ZenonModulo.

Delay in reimbursements

Reminder: COST sends the money to the Grant Holder which is in charge of checking claims and reimbursing people

The current Grant Holder is Inria

Inria has an important delay in payments (reimbursements will start in the coming days only) because:

- This is the first time Inria has to manage a COST action
- New internal procedures had to be formalized in order to comply with the COST rules and with national regulation
- Inria faces difficulties due to the change of his financial and human resources information system

$\Rightarrow$ Inria asked COST to extend the current grant period to Dec 31