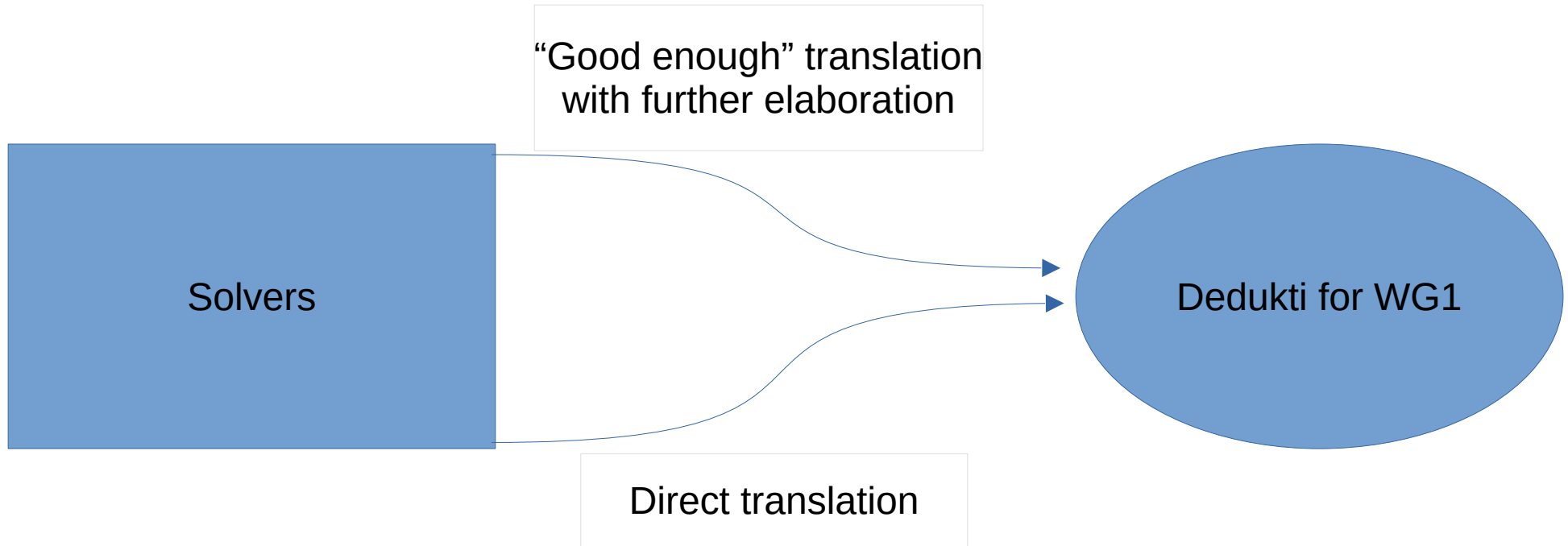


WG2: Automated Theorem Provers

Mathias Fleury & Sophie Tourret · MC · 19th of
September

Contributions Overview



Main Contribution

- Every solver developer is convinced that proofs are useful...
- ... even if they come at a cost
- Proofs are possible in way more contexts than before

STSMs

Overview

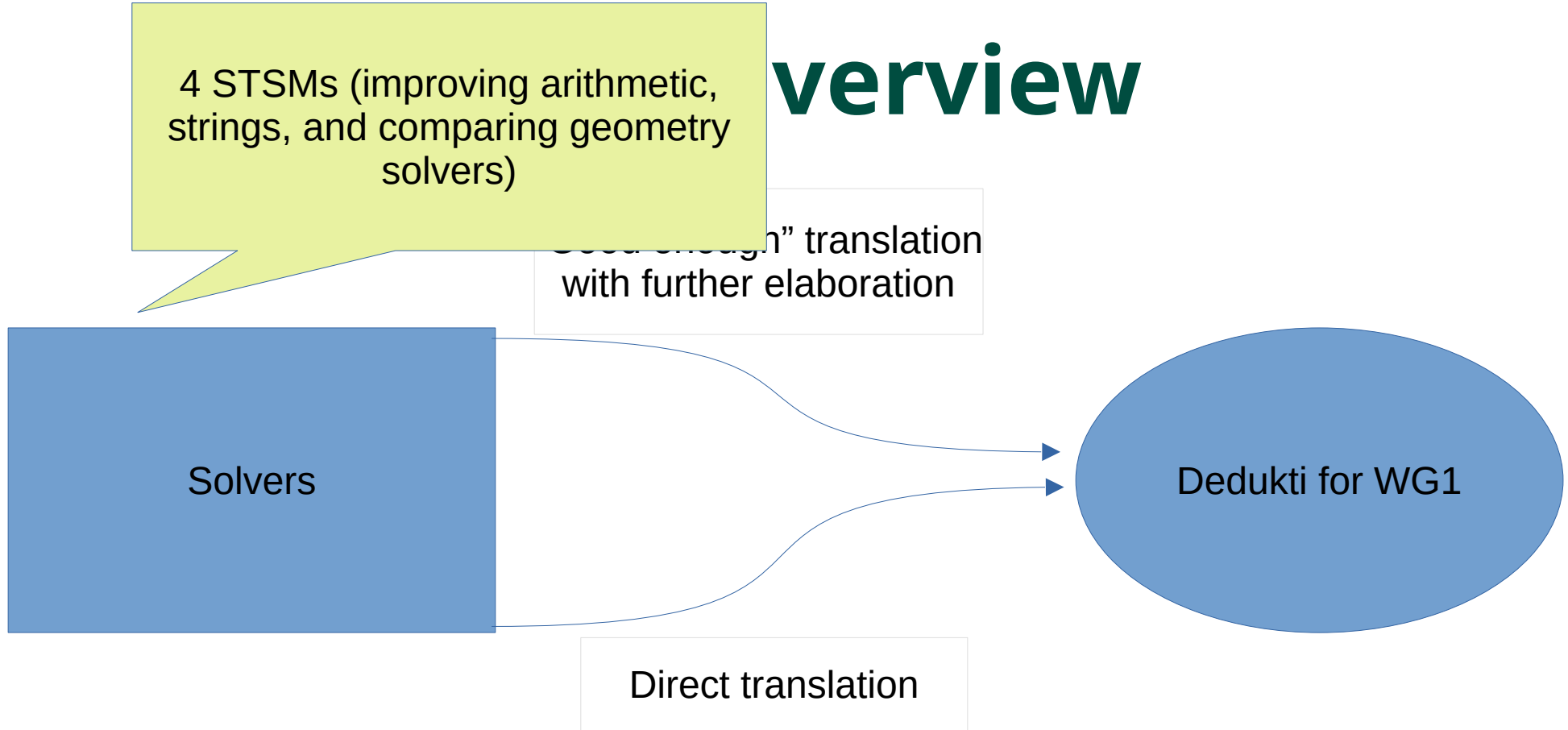
4 STSMs (improving arithmetic, strings, and comparing geometry solvers)

“Good enough” translation
with further elaboration

Solvers

Dedukti for WG1

Direct translation



STSMs Overview

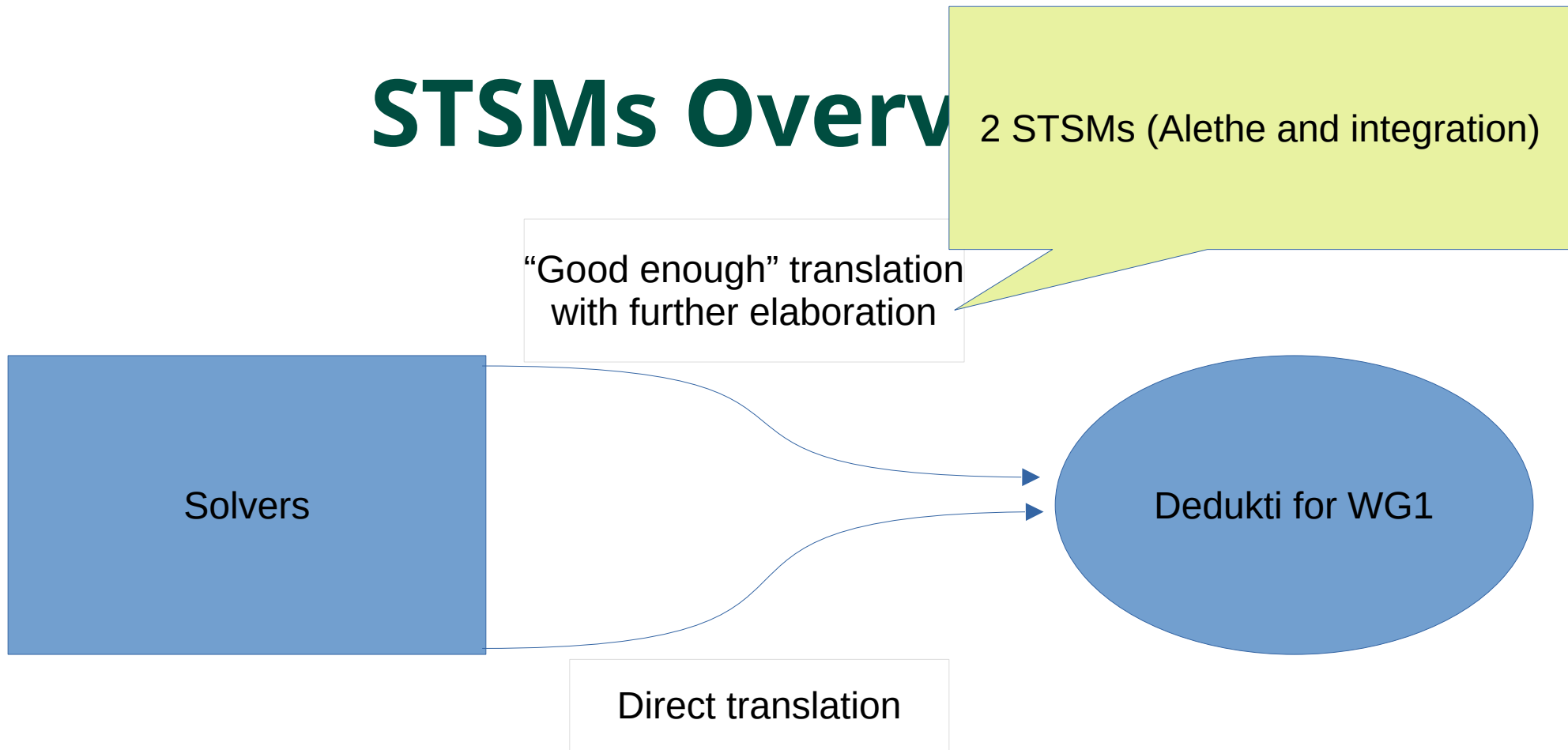
2 STSMs (Alethe and integration)

“Good enough” translation
with further elaboration

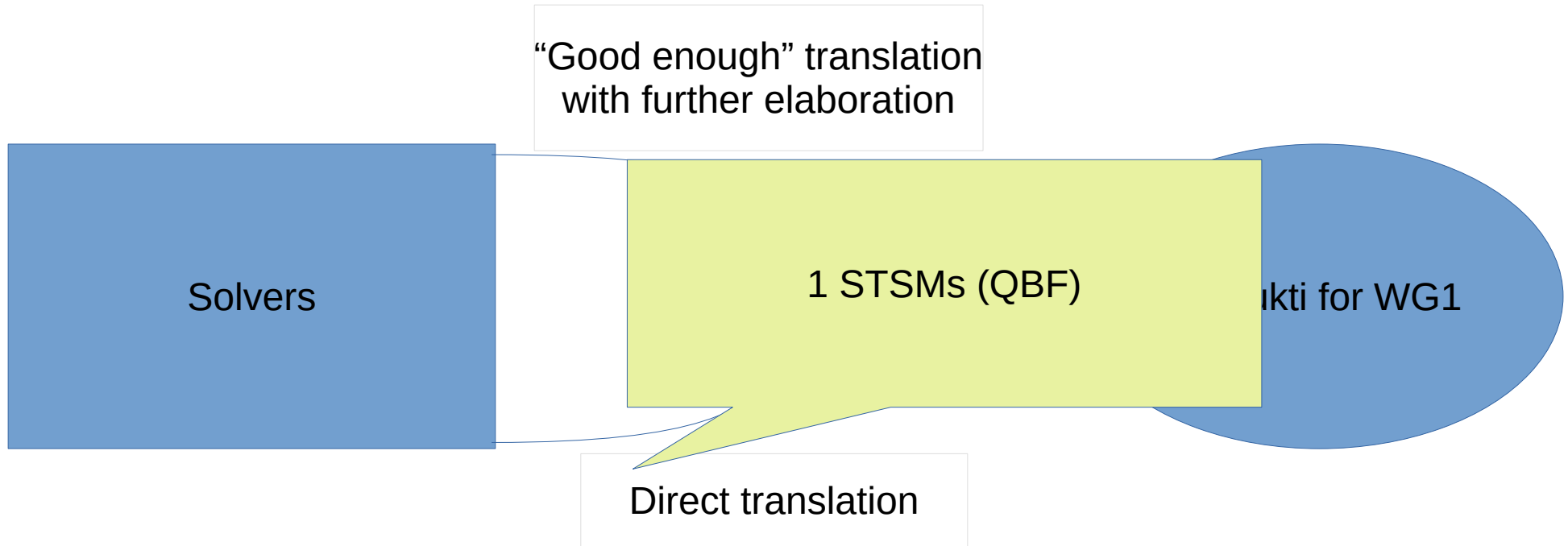
Solvers

Dedukti for WG1

Direct translation



STSMs Overview



WG2 Activities

- STSMs are not the full picture...
- ... a lot of work happens in the US
- Elaborators like Carcara and GDV, solvers in cvc5 to produce good enough proofs)

Activities

Summer Schools

- VTSA (2022) with WG3
- SAT/SMT/AR 2024

Workshops

- TPTPTP (2023 and 2024)
- Rule-based automated provers for geometry
- [Proof Systems for Mathematics and Verification](#) (2024)
- WG2 meeting co-organized with WHOOPS (2025)

WG2 Meetings

- 2022 during FLOC with PAAR
- 2023 in Liège and Inter-WG meeting
- 2024 joint with WG1+2+4
- Several Dedukti meetings (2022, 2023)

Deliverables

D3

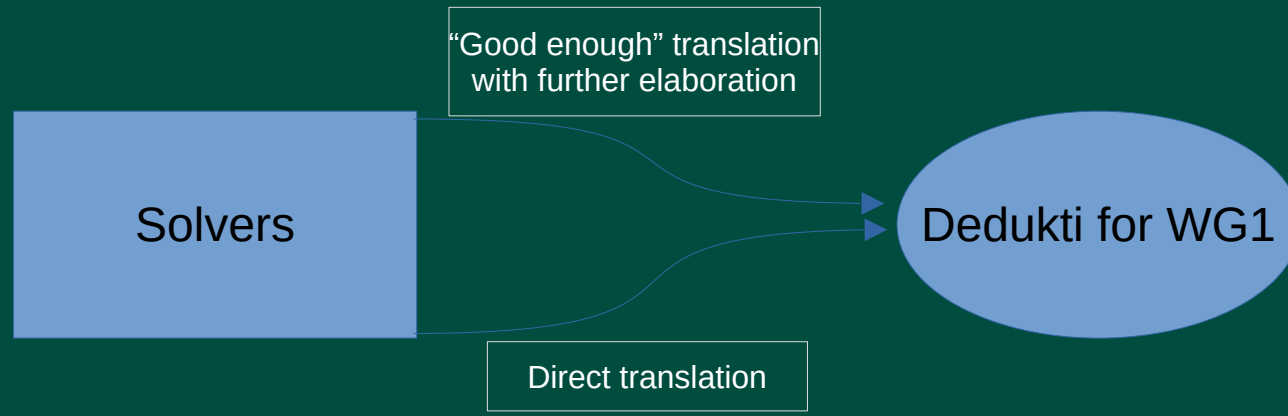
- Inventory of automated theorem provers producing proofs, description of proof formats, and inventory of checking tools for these proof formats
- <https://github.com/EuroProofNet/ATP/wiki>

- Also Vampire
- veriPB
(optimizations

Deliverable 9

Software for translating proof formats used by automated theorem provers to Dedukti.

- [ZenonModulo](#)
- [ArchSAT](#)
- [iProverModulo](#)
- [Ekstrakto](#): TSTP to Lambdapi
- [Skonvertio](#) deskolemizer
- [GDV-LP](#): TSTP to Lambdapi/FOL ([doc](#))
- [Carcara](#): translator from Alethe to Lambdapi



Thank you!

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