

CoCo 2021 Participant: FORTify 1.1*

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The first-order theory of rewriting is a decidable theory for linear variable-separated rewrite systems. The decision procedure goes back to Dauchet and Tison [1]. In this theory confluence-related properties on ground terms are easily expressible. An extension of the theory to multiple rewrite systems, as well as the decision procedure, has recently been formalized [2, 3] in Isabelle/HOL. The code generation facilities of Isabelle then give rise to the certifier FORTify [4] which checks certificate constructed by FORT-h [6].

FORTify takes as input an answer (YES/NO), a formula, a list of TRSs, and a certificate proving that the formula holds (does not hold) for the given TRSs. It then checks the integrity and validity of the certificate. Since the first release the formalization was extended to support properties on arbitrary terms, as described in [5]. This allows FORTify to participate, together with FORT-h, in the following CoCo 2021 categories: COM, TRS, GCR, UNC, and UNR.

A command-line version of the tool can be downloaded from

[https://fortissimo.uibk.ac.at/fort\(ify\)/](https://fortissimo.uibk.ac.at/fort(ify)/)

References

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