



15th Confluence Competition

Aart Middeldorp

Naoki Nishida

Teppei Saito

René Thiemann

Sarah Winkler

<https://project-coco.uibk.ac.at/2026>

Outline

- 1. Acknowledgements**
- 2. History**
- 3. 2026**
- 4. Awards**
- 5. Outlook**

Acknowledgements

- CoCo 2026 tool authors

Acknowledgements

- ▶ CoCo 2026 tool authors
- ▶ IWC 2026 chairs

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 - ▶ Keisuke Nakano
 - ▶ Vincent van Oostrom

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- ▶ Geoff Sutcliffe
- ▶ Nao Hirokawa

Outline

1. Acknowledgements

2. History

3. 2026

4. Awards

5. Outlook

2012

TRS

CPF

 ACP	✓											
 CSI	✓	✓										
 Saigawa	✓											
 CeTA		✓										

2013

TRS

CPF

 ACP	✓											
 CSI	✓	✓										
 Saigawa	✓											
 CeTA		✓										

2014

TRS

CPF

CTRS

 ACP												
 CSI												
 Saigawa												
 CeTA												
 CoLL												
 ConCon												
 CO3												

2015

TRS

CPF

CTRS

HRS

GCR

NRS

● ACP	✓	✓										
≡ CSI	✓	✓										
≡ CeTA		✓										
● CoLL-Saigawa	✓											
≡ ConCon		✓	✓									
⊖ CO3			✓									
≡ CoScart			✓									
● ACPH				✓								
≡ CSI ^{ho}				✓								
● AGCP					✓							
● NoCo						✓						

● ACP	✓	✓										
≡ CSI	✓	✓					✓					
≡ CeTA		✓						✓				
● CoLL-Saigawa	✓											
≡ ConCon			✓					✓				
⊖ CO3			✓									
≡ CoScart			✓									
● ACPH				✓								
≡ CSI ^{ho}				✓								
● AGCP					✓							
● Nrbox						✓						
≡ FORT					✓		✓					

2017

TRS CPF-TRS CTRS HRS GCR NFP UNR CPF-CTRS UNC

● ACP	✓	✓										
▬ CSI	✓	✓				✓	✓		✓			
▬ CeTA		✓						✓				
● CoLL-Saigawa	✓											
▬ ConCon			✓					✓				
◐ CO3			✓									
● ACPH				✓								
▬ CSI ^{ho}				✓								
● AGCP					✓							
▬ FORT					✓	✓	✓		✓			
● SOL				✓								

2018

TRS CPF-TRS CTRS HRS GCR NFP UNR CPF-CTRS UNC

 ACP	✓	✓	✓						✓			
 CSI	✓	✓				✓	✓		✓			
 CeTA		✓						✓				
 CoLL-Saigawa	✓											
 ConCon			✓					✓				
 CO3			✓									
 CSI ^{ho}				✓								
 AGCP					✓							
 FORT					✓	✓	✓		✓			
 SOL				✓								

2019

TRS CPF-TRS CTRS HRS GCR NFP UNR CPF-CTRS UNC COM INF SRS

● ACP	✓	✓	✓						✓	✓		✓
≡ CSI	✓	✓				✓	✓		✓			✓
● CoLL										✓		
≡ CeTA		✓						✓				
● CoLL-Saigawa	✓											✓
≡ ConCon			✓					✓			✓	
● CO3			✓								✓	
🇪🇸 infChecker											✓	
≡ maedmax											✓	
🇬🇧 CSI ^{ho}				✓								
● AGCP					✓							
● Moca											✓	
≡ FORT					✓	✓	✓		✓	✓		
🇩🇪 noko-leipzig												✓
≡ nonreach											✓	

2020

TRS CPF-TRS CTRS HRS GCR NFP UNR CPF-CTRS UNC COM INF SRS

 ACP	✓	✓	✓							✓	✓		✓
 CSI	✓	✓				✓	✓		✓				✓
 CoLL											✓		
 CeTA		✓						✓					
 CoLL-Saigawa	✓												✓
 ConCon			✓					✓				✓	
 CO3			✓									✓	
 infChecker												✓	
 CSI ^{ho}				✓									
 AGCP					✓								
 Moca												✓	
 FORT-h					✓	✓	✓		✓	✓			
 SOL				✓									
 nonreach													✓

2021

TRS

CPF-TRS

CTRS

GCR

NFP

UNR

UNC

COM

INF

SRS

 ACP	✓	✓	✓						✓	✓		✓
 CSI	✓	✓				✓	✓		✓			✓
 CoLL										✓		
 CeTA		✓										
 CoLL-Saigawa	✓											✓
 CO3			✓								✓	
 infChecker											✓	
 FORTify	✓				✓		✓		✓	✓		
 CONFident	✓		✓									✓
 AGCP					✓							
 NaTT											✓	
 FORT-h					✓	✓	✓		✓	✓		

2022

TRS

CPF-TRS

CTRS

GCR

NFP

UNR

CSR

UNC

COM

INF

SRS

 ACP	✓	✓	✓						✓	✓		✓
 CSI	✓	✓				✓	✓		✓			✓
 CoLL										✓		
 CeTA		✓										
 Hakusan	✓											✓
 Toma											✓	
 CO3			✓								✓	
 infChecker											✓	
 FORTify		✓			✓	✓	✓		✓	✓		
 CONFident	✓		✓					✓				✓
 AGCP					✓							
 NaTT											✓	
 FORT-h		✓			✓	✓	✓		✓	✓		

 ACP	✓		✓				✓		✓	✓		✓
 CSI	✓						✓	✓		✓		✓
 CoLL										✓		
 CeTA	✓									✓	✓	✓
 Hakusan	✓											✓
 Toma											✓	
 CO3			✓								✓	
 infChecker											✓	
 FORTify	✓				✓	✓	✓		✓	✓		
 CONFident	✓		✓					✓				✓
 AGCP					✓							
 NaTT											✓	
 FORT-h	✓				✓	✓	✓		✓	✓		
 ConfCSR								✓				
 nonreach											✓	

 ACP	✓		✓			✓		✓	✓		✓
 CSI	✓					✓	✓		✓		✓
 CeTA	✓									✓	✓
 Hakusan	✓										✓
 Moca										✓	
 CO3			✓							✓	
 infChecker										✓	
 FORTify	✓				✓	✓	✓		✓	✓	
 CONFident	✓		✓					✓			✓
 AGCP					✓						
 NaTT										✓	
 FORT-h	✓				✓	✓	✓		✓	✓	
 CRaris		✓									
 crest		✓									

2025	TRS	LCTRS	CTRS						CSR				INF		
 ACP	✓		✓												
 CSI	✓														
 Grackle-CSI	✓														
 CeTA	✓												✓		
 Hakusan	✓														
 Natto													✓		
 CO3			✓										✓		
 infChecker													✓		
 FORTify	✓														
 CONFident	✓		✓						✓						
 AProVE	✓														
 SOL									✓						
 FORT-h	✓														
 CRaris		✓													
 crest		✓													

- ▶ CoCo is powered by StarExec  Miami

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► **exciting** to watch



► CoCo is powered by StarExec  Miami

► **exciting** to watch, partly due to real-time **yes / no conflicts**

INF

problems: 100
solvers: CO3 ConCon 1.9 InfChecker 1.0 maedmax Moca
nonreach_COCO_2019_INF
conflicts: 869.trs 870.trs 854.trs 874.trs 858.trs 875.trs 909.trs

CO3 (100 of 100): score: 12.00%
YES:12 NO:0 MAYBE:88

ConCon 1.9 (100 of 100): score: 38.00%
YES:38 NO:0 MAYBE:62

InfChecker 1.0 (100 of 100): score: 72.00%
YES:40 NO:32 MAYBE:28

maedmax (100 of 100): score: 15.00%
YES:15 NO:0 MAYBE:84

Moca (100 of 100): score: 26.00%
YES:26 NO:0 MAYBE:74

nonreach_COCO_2019_INF (100 of 100): score: 30.00%
YES:30 NO:0 MAYBE:70

COM

problems: 85
solvers: ACP ver.0.70 COM CoLL1.3 FORT 2.1
conflicts: 1095.trs 1073.trs 1074.trs 1063.trs 1116.trs

ACP ver.0.70 COM (85 of 85): score: 67.06%
YES:17 NO:40 MAYBE:28

CoLL1.3 (85 of 85): score: 49.41%
YES:25 NO:17 MAYBE:43

FORT 2.1 (85 of 85): score: 38.82%
YES:16 NO:17 MAYBE:52

TRS

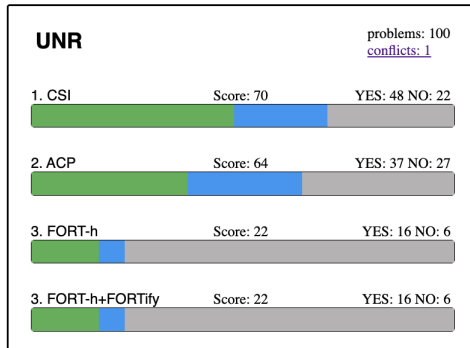
problems: 100
solvers: ACP ver.0.70 TRS SRS CoLL_Saigawa1.3 CSI
conflicts: 538.trs

ACP ver.0.70 TRS SRS (100 of 100): score: 79.00%
YES:44 NO:35 MAYBE:21

CoLL_Saigawa1.3 (100 of 100): score: 52.00%
YES:30 NO:22 MAYBE:48

CSI (100 of 100): score: 75.00%
YES:42 NO:33 MAYBE:25

- ▶ CoCo is powered by StarExec  Miami
- ▶ **exciting** to watch, partly due to real-time **yes / no conflicts**



final slide CoCo 2025 presentation

- CoCo 2026 during IWC 2026 ?

final slide CoCo 2025 presentation

- ▶ CoCo 2026 during IWC 2026 ?
- ▶ T-shirt ?

final slide CoCo 2025 presentation

- ▶ CoCo 2026 during IWC 2026 ?
- ▶ T-shirt ?
- ▶ revive previous categories ?
 - ▶ HRS
 - ▶ NRS

final slide CoCo 2025 presentation

- ▶ CoCo 2026 during IWC 2026 ?
- ▶ T-shirt ?
- ▶ revive previous categories ?
 - ▶ HRS    
 - ▶ NRS   

Outline

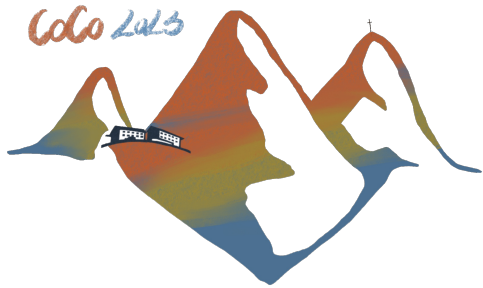
1. Acknowledgements

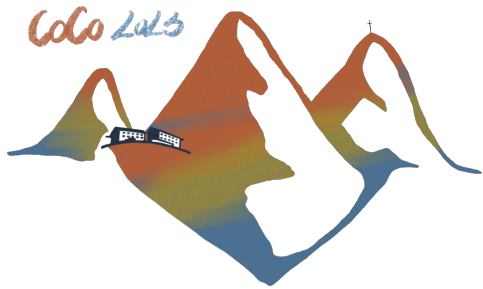
2. History

3. 2026

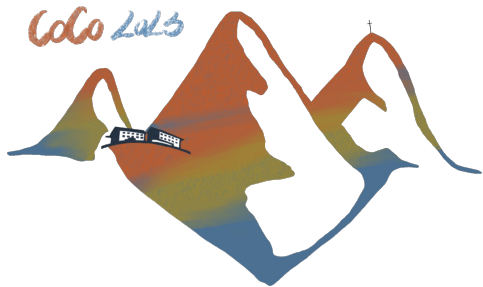
4. Awards

5. Outlook



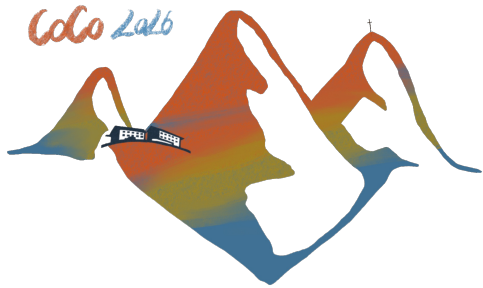


T-shirt 20 €



T-shirt 20 €





<https://ari-cops.uibk.ac.at/liveview/2026.html>

 ACP	✓		✓									
 CSI	✓											
 Grackle-CSI	✓											
 CeTA	✓										✓	
 Hakusan	✓											
 Natto											✓	
 CO3			✓								✓	
 infChecker											✓	
 FORTify	✓											
 CONFident	✓		✓					✓				
 AProVE	✓											
 SOL								✓				
 FORT-h	✓											
 CRaris		✓										
 crest		✓										

 ACP	✓		✓			✓		✓	✓		✓
 CSI	✓					✓	✓		✓		✓
 CeTA-Prover	✓									✓	✓
 CeTA	✓									✓	✓
 Hakusan	✓										
 Natto										✓	
 CO3	✓		✓							✓	
 infChecker										✓	
 FORTify	✓				✓	✓	✓		✓	✓	
 CONFident	✓		✓					✓			✓
 AProVE	✓										
 nonreach+CP										✓	
 FORT-h	✓				✓	✓	✓		✓	✓	
 CRaris		✓									
 crest		✓									

ACP

 CSI	✓					✓	✓		✓			✓
 CeTA-Prover	✓									✓		✓
 CeTA	✓									✓	✓	✓
 Hakusan	✓											
 Natto											✓	
 CO3	✓		✓								✓	
 infChecker											✓	
 FORTify	✓				✓	✓	✓		✓	✓		
 CONFident	✓		✓					✓				✓
 AProVE	✓											
 nonreach+CP											✓	
 FORT-h	✓				✓	✓	✓		✓	✓		
 CRaris		✓										
 crest		✓										

Outline

1. Acknowledgements

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3. 2026

Categories

Rules

Live View

4. Awards

5. Outlook

Categories

TRS	confluence of first-order term rewrite systems
CTRS	confluence of first-order conditional term rewrite systems
HRS	confluence of higher-order rewrite systems
GCR	ground-confluence of many-sorted first-order rewrite systems
LCTRS	confluence of logically constrained term rewrite systems
NFP	normal form property of first-order rewrite systems
UNR	unique normal forms wrt reduction of first-order rewrite systems
UNC	unique normal forms wrt conversion of first-order rewrite systems
COM	commutation of first-order rewrite systems
INF	infeasibility
SRS	confluence of string rewrite systems
CSR	confluence of context-sensitive rewriting

Categories

TRS	confluence of first-order term rewrite systems
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CSR	confluence of context-sensitive rewriting

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Live View

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Competition Rules

► Scoring

- 100 random problems per category, using seed digits provided by panel members
- tools output YES, NO or MAYBE on first line followed by proof
- separate rankings for YES and NO and combined YES/NO answers
- winning tools of 2025 participate as demonstration tools in 2026

Competition Rules

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 - ▶ tools output YES, NO or MAYBE on first line followed by proof
 - ▶ separate rankings for YES and NO and combined YES/NO answers
 - ▶ winning tools of 2025 participate as demonstration tools in 2026
- ▶ **Secret Problems**
 - ▶ guaranteed to be selected
 - ▶ at most two problems per category per tool

Secret Problems

5 secret problems submitted to CoCo 2025

Secret Problems

10 secret problems submitted to CoCo 2026:

▶ 2 by Nao Hirokawa

TRS

1629


1634


Secret Problems

10 secret problems submitted to CoCo 2026:

▶ 2 by Nao Hirokawa

TRS

$$\begin{aligned}h(g, a, a) &\rightarrow h(f, a, a) \\ a &\rightarrow h(g, a, a)\end{aligned}$$

1629


1634


$$\begin{aligned}h(x, h(z, y, y), y) &\rightarrow h(x, y, y) \\ h(x, y, h(z, y, y)) &\rightarrow h(x, y, y)\end{aligned}$$

Secret Problems

10 secret problems submitted to CoCo 2026:

▶ 2 by Nao Hirokawa

TRS

$$\begin{aligned}h(g, a, a) &\rightarrow h(f, a, a) \\ a &\rightarrow h(g, a, a)\end{aligned}$$

▶ 4 by René Thiemann

COM TRS



$$\begin{aligned}h(x, h(z, y, y), y) &\rightarrow h(x, y, y) \\ h(x, y, h(z, y, y)) &\rightarrow h(x, y, y)\end{aligned}$$



Secret Problems

10 secret problems submitted to CoCo 2026:

- ▶ 2 by Nao Hirokawa

TRS

$$\begin{aligned}h(g, a, a) &\rightarrow h(f, a, a) \\ a &\rightarrow h(g, a, a)\end{aligned}$$

- ▶ 4 by René Thiemann

COM TRS

- ▶ 2 by Teppei Saito

INF



$$\begin{aligned}h(x, h(z, y, y), y) &\rightarrow h(x, y, y) \\ h(x, y, h(z, y, y)) &\rightarrow h(x, y, y)\end{aligned}$$



Secret Problems

10 secret problems submitted to CoCo 2026:

▶ 2 by Nao Hirokawa

TRS

$$\begin{aligned} h(g, a, a) &\rightarrow h(f, a, a) \\ a &\rightarrow h(g, a, a) \end{aligned}$$



$$\begin{aligned} h(x, h(z, y, y), y) &\rightarrow h(x, y, y) \\ h(x, y, h(z, y, y)) &\rightarrow h(x, y, y) \end{aligned}$$

▶ 4 by René Thiemann

COM TRS



▶ 2 by Teppei Saito

INF



$$Sxyz \rightarrow xz(yz)$$

$$Kxy \rightarrow x$$

$$Y f \stackrel{?}{=} f(Y f)$$

Secret Problems

10 secret problems submitted to CoCo 2026:

▶ 2 by Nao Hirokawa

TRS

$$\begin{aligned} h(g, a, a) &\rightarrow h(f, a, a) \\ a &\rightarrow h(g, a, a) \end{aligned}$$



$$\begin{aligned} h(x, h(z, y, y), y) &\rightarrow h(x, y, y) \\ h(x, y, h(z, y, y)) &\rightarrow h(x, y, y) \end{aligned}$$

▶ 4 by René Thiemann

COM TRS



▶ 2 by Teppei Saito

INF



$$Sxyz \rightarrow xz(yz)$$

$$Kxy \rightarrow x$$

$$Yf \stackrel{?}{=} f(Yf)$$

▶ 2 by Jan-Christoph Kassing and Alwin Schüßler

TRS



Secret Problems

10 secret problems submitted to CoCo 2026:

► 2 by Nao Hirokawa

TRS

$$\begin{aligned} h(g, a, a) &\rightarrow h(f, a, a) \\ a &\rightarrow h(g, a, a) \end{aligned}$$



$$\begin{aligned} h(x, h(z, y, y), y) &\rightarrow h(x, y, y) \\ h(x, y, h(z, y, y)) &\rightarrow h(x, y, y) \end{aligned}$$

► 4 by René Thiemann

COM TRS



► 2 by Teppei Saito

INF



$$Sxyz \rightarrow xz(yz)$$

$$Kxy \rightarrow x$$

$$Yf \stackrel{?}{=} f(Yf)$$

► 2 by Jan-Christoph Kassing and Alwin Schüßler

TRS



$$f(x, a) \rightarrow a$$

$$f(x, b) \rightarrow b$$

$$h(g(x), x, i(x)) \rightarrow h(i(x), x, g(x))$$

$$h(i(x), x, g(x)) \rightarrow h(g(x), x, i(x))$$

$$f(g(a), x) \rightarrow f(x, x)$$

$$f(g(b), x) \rightarrow f(x, x)$$

Competition Rules

- ▶ Scoring
 - ▶ 100 **random** problems per category, using seed digits provided by panel members
 - ▶ tools output YES, NO or MAYBE on first line followed by proof
 - ▶ separate rankings for YES and NO and combined YES/NO answers
 - ▶ winning tools of 2025 participate as demonstration tools in 2026
- ▶ Secret Problems
 - ▶ guaranteed to be selected
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Problem Selection

Example: ARI-COPS queries for COM category

① 1630 or 1631

② `limit:98,401 1..1628 2trs`

Problem Selection

Example: ARI-COPS queries for COM category

① 1630 or 1631

returns 2 secret problems

② limit:98,401 1..1628 2trs

► secret problems have numbers 1629 ... 1638

Problem Selection

Example: ARI-COPS queries for COM category

- ① 1630 or 1631
returns 2 secret problems
- ② `limit:98,401 1..1628 2trs`

- ▶ secret problems have numbers 1629 ... 1638
- ▶ seed digits of panel members

Problem Selection

Example: ARI-COPS queries for COM category

- ① 1630 or 1631
returns 2 secret problems
- ② `limit:98,401 1..1628 2trs`

- ▶ secret problems have numbers 1629 ... 1638
- ▶ seed digits of panel members
- ▶ 1628 problems in ARI-COPS database

Problem Selection

Example: ARI-COPS queries for COM category

- ① 1630 or 1631
returns 2 secret problems
 - ② limit:98,401 1..1628 2trs
returns 85 problems
- ▶ secret problems have numbers 1629 ... 1638
 - ▶ seed digits of panel members
 - ▶ 1628 problems in ARI-COPS database

Problem Selection

Example: ARI-COPS queries for COM category

- ① 1630 or 1631
returns 2 secret problems
 - ② limit:98,401 1..1628 2trs
returns 85 problems
- ▶ secret problems have numbers 1629 ... 1638
 - ▶ seed digits of panel members
 - ▶ 1628 problems in ARI-COPS database



search

1605 problems matched ([download](#)) view: [problems](#) | [results](#) order: [asc](#) | [desc](#) download: [all data](#)[« back](#) [next »](#)**1.ari**

```
; @author Takahito Aoto
; @author Junichi Yoshida
; @author Yoshihito Toyama
; @doi 10.1007/9780827086
; @cops 1
; [1] Example 6
(format TRS)
(fun F 2)
(fun f 2)
(fun g 1)
(fun h 1)
(rule (f x y) x)
(rule (f x y) (f x (g y)))
(rule (g x) (h x))
(rule (F (g x) x) (F x (g x)))
(rule (F (h x) x) (F x (h x)))
```

YES: [well-formed](#) [trs](#) [CR](#)NO: [ctr](#) [cstrs](#) [csctr](#) [mstrs](#) [lctr](#) [2trs](#) [infeasibility](#) [ground](#) [left-linear](#) [right-ground](#) [srs](#)**2.ari**

```
; @author Takahito Aoto
; @author Junichi Yoshida
; @author Yoshihito Toyama
; @doi 10.3217/jucs-003-11-1134
; @cops 2
; [2] Example 1
(format TRS)
(fun F 2)
```


Competition Rules

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▶ Secret Problems

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▶ Incorrect Results

- ▶ tools with incorrect results (observed during live competition due to YES/NO conflict, or communicated afterwards by tool authors to SC) are excluded from results table

Competition Rules

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- ▶ 100 random problems per category, using seed digits provided by panel members
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- ▶ guaranteed to be selected
- ▶ at most two problems per category per tool

▶ Incorrect Results

- ▶ tools with incorrect results (observed during live competition due to YES/NO conflict, or communicated afterwards by tool authors to SC) are excluded from results table
- ▶ (corrected) tools are available from **ARIWeb** for testing

Input Problem

Import system from
the [ARI database](#):

Property:

```
1 ; @doi 10.4230/LIPIcs.RTA.2015.257
2 ; @cops 442
3 ; [81] Example 1
4 (format TRS)
5 (fun f 1)
6 (rule (f (f x)) x)
7 (rule (f x) (f (f x)))
8
```

Timeout (s):

Tools

☐ Selected
only

☐ Hakusan+CeTA

TRS

☒ ACP

☐ ACP+CeTA

☒ CONFident

☒ CSI

☒ CSI+CeTA

☐ FORT-h

☐ FORT-h+FORTify

☒ Hakusan+CeTA

2023

CSRS

☐ CONFident

Input Problem

Import system from
the ARI database:

409

Import

Property: CR

Tools

Filter tools...

☐ Selected
only

```

1 ; @doi 10.4230/LIPIcs.RTA.2015.257
2 ; @cops 442
3 ; [81] Example 1
4 (format TRS)
5 (fun f 1)
6 (rule (f (f x)) x)
7 (rule (f x) (f (f x)))
8

```

Timeout (s): 30

Submit

☐ Hakusan+CeTA

TRS

☒ ACP

☐ ACP+CeTA

☒ CONFident

☒ CSI

☒ CSI+CeTA

☐ FORT-h

☐ FORT-h+FORTify

☒ Hakusan+CeTA

2023

CSRS

☐ CONFident

Results

ACP CR/2024/TRS/ACP

MAYBE 0.72s

CONFident CR/2024/TRS/CONFident

MAYBE 0.09s

CSI CR/2024/TRS/CSI

YES 2.52s

CSI+CeTA CR/2024/TRS/CSI+CeTA

YES 0.50s

Hakusan+CeTA CR/2024/TRS/Hakusan+CeTA

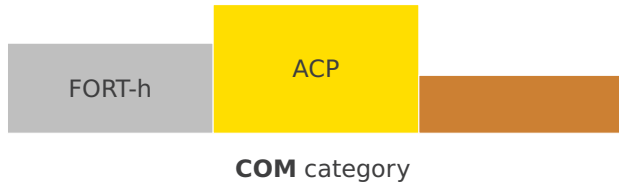
MAYBE 0.22s

CoCo 2026 Live View

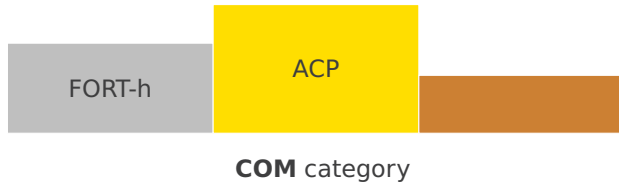
<https://ari-cops.uibk.ac.at/liveview/2026.html>



2024 Results



2024 Results



▶ previous winners: FORT 2019 ACP 2020 2023 2024 CoLL 2021 2022

2024 Results



- ▶ previous winners: FORT 2019 ACP 2020 2023 2024 CoLL 2021 2022
- ▶ 2026 participants: ACP CeTA-Prover+CeTA FORT-h FORT-h+FORTify

2024 Results



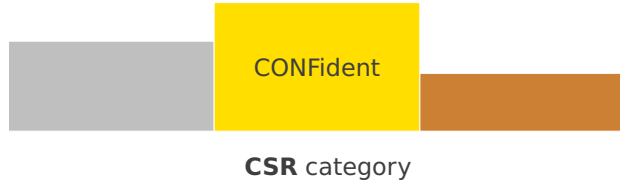
- ▶ previous winners: FORT 2019 ACP 2020 2023 2024 CoLL 2021 2022
- ▶ 2026 participants: ACP CeTA-Prover+CeTA FORT-h FORT-h+FORTify

CeTA-Prover 1.0

- new feature in CeTA: certify confluence and commutation by **Okui's criterion**
- **limited tool support**: CSI implements Okui's criterion, but
 - only for confluence
 - with a restricted search engine for joins ($s \multimap \cdot \leftarrow t$ instead of $s \multimap \cdot \multimap^* \leftarrow t$)
- consequence: develop **CeTA-Prover**; design:
 - use **verified algorithms of CeTA** (sim-crit-pairs, rewrite, mstep, tcap, ...)
 - and **unverified** breadth-first **search** for rewrite sequences: $s \rightarrow^* t$?
- participation
 - CR and COM: semi-decision proc. for criteria of Okui (SCPs) and Toyama (PCPs)
 - INF: reconstruct rewrite sequences in feasibility proofs of *nonreach*
- availability

<https://isafor-ceta.uibk.ac.at/ceta-prover.php>

2025 Results

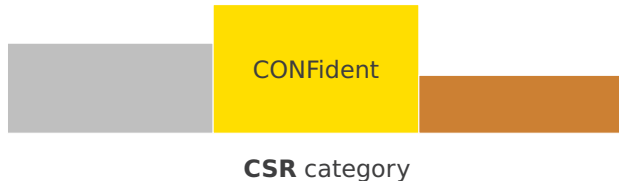


2025 Results



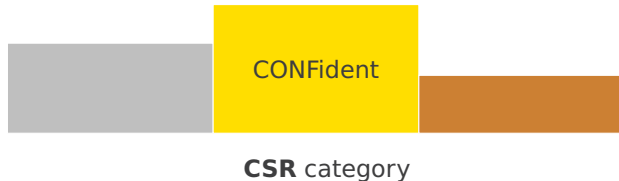
▶ previous winner: CONFident 2022 2023 2024 2025

2025 Results



- ▶ previous winner: CONFident 2022 2023 2024 2025
- ▶ 2026 participants: CONFident

2025 Results



- ▶ previous winner: CONFident 2022 2023 2024 2025
- ▶ 2026 participants: **CONFident**



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CONFident at CoCo 2026

Raúl Gutiérrez¹ Salvador Lucas¹

LISBON, 2026

¹Valencian Research Institute for Artificial Intelligence
Universitat Politècnica de València
Spain

- CONFident is a tool for checking **(non-)confluence** of Generalized Term Rewriting Systems (GTRSs).
- This year, our efforts focused primarily on the GTRS extension (presented at IWC'26), so there were no direct improvements affecting the competition.
- We encountered several issues in producing a compiled version that worked correctly in the new Starexec version. We hope that no problems were missed as a consequence of these issues.
- The bibliography contains links to our recent publications.

- It is written in Haskell and implements the **Confluence Framework**. The tool is available here:

`http://zenon.dsic.upv.es/confident/`

- Bibliography:

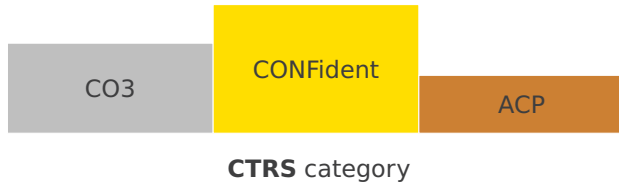
GL24 R. Gutiérrez and S. Lucas. Proving Confluence in the Confluence Framework with CONFident. *Fundamenta Informaticae* 192, Issue 2: LOPSTR 2022, 2024.

GL25 R. Gutiérrez and S. Lucas. Proving and disproving feasibility with infChecker. In *Proc. of the 14th International Workshop on Confluence, IWC'25*, pp 38–44, 2025.

GL26 R. Gutiérrez and S. Lucas. On Proving Confluence of Generalized Term Rewriting Systems Using CONFident. In *Proc. of the 15th International Workshop on Confluence, IWC'26*, pp 51–57, 2026.

Luc25 S. Lucas. Confluence of Almost Parallel-Closed Generalized Term Rewriting Systems. In *Proc. of 30th International Conference on Automated Deduction, CADE-30*, pp 187–206, 2025.

2025 Results



2025 Results



CTRS category



- ▶ previous winners: CO3 2014 ConCon 2015 2016 2017 2018 2020 ACP 2019
CONFident 2021 2022 2023 2024 2025

2025 Results



- ▶ previous winners: CO3 2014 ConCon 2015 2016 2017 2018 2020 ACP 2019
CONFident 2021 2022 2023 2024 2025
- ▶ 2026 participants: ACP CO3 CONFident

2025 Results



- ▶ previous winners: CO3 2014 ConCon 2015 2016 2017 2018 2020 ACP 2019
CONFident 2021 2022 2023 2024 2025
- ▶ 2026 participants: ACP CO3 CONFident

CO3 (Ver. 2.7)

a **C**onverter for proving **C**onfluence of **C**onditional TRSs

Naoki Nishida Misaki Kojima
Nagoya University, Japan

Overview

CO3 proves confluence of 3-DCTRSs or infeasibility of conditions by using

- very simple termination/confluence criteria for TRSs
- the improved sequential **unraveling** $\mathbb{U}_{conf}$ [Gmeiner et al, 13],
- **narrowing trees** [Nishida & Maeda, 18]

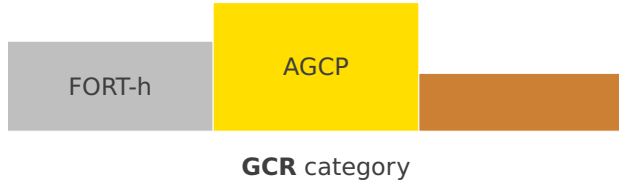
Infeasibility and Confluence Criterion

- Condition c is infeasible w.r.t. DCTRS $\mathcal{R}$ if $\mathbb{U}_{conf}(\mathcal{R})$ is right-linear and a **narrowing tree for c** defines $\emptyset$ [Maeda et al, 19]
- Syntactically deterministic 3-CTRSs $\mathcal{R}$ is confluent if either
 - ▶ $\mathcal{R}$ is weakly left-linear and $\mathbb{U}_{conf}(\mathcal{R})$ is confluent [Gmeiner et al, 13]
or
 - ▶ $\mathbb{U}_{conf}(\mathcal{R})$ is terminating and right-linear
and $\forall \langle s, t \rangle \Leftarrow c \in CP(\mathcal{R}), (c = \epsilon \wedge s = t) \vee$ “ c is infeasible” [Maeda et al, 19]

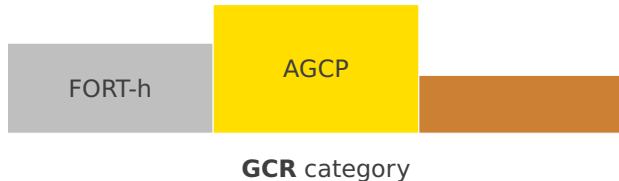
- Implemented a very light LPO and RPO for termination
- Joined CTRS, INF, and **TRS** of CoCo 2026

[Ver. 2.7]

2024 Results



2024 Results



▶ previous winner: AGCP 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

2024 Results



- ▶ previous winner: AGCP 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
- ▶ 2026 participants: AGCP FORT-h FORT-h + FORTify

2024 Results



- ▶ previous winner: AGCP 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
- ▶ 2026 participants: AGCP FORT-h FORT-h + FORTify

2025 Results



2025 Results



▶ previous winner: infChecker 2019 2020 2021 2022 2023 2024 2025

2025 Results



- ▶ previous winner: infChecker 2019 2020 2021 2022 2023 2024 2025
- ▶ 2026 participants: CO3 infChecker Natto nonreach + CeTa-Prover
nonreach + CeTa-Prover + CeTA

2025 Results



- ▶ previous winner: infChecker 2019 2020 2021 2022 2023 2024 2025
- ▶ 2026 participants: CO3 infChecker Natto nonreach + CeTa-Prover
nonreach + CeTa-Prover + CeTA



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VRain

Valencian Research Institute
for Artificial Intelligence

infChecker at CoCo 2026

Raúl Gutiérrez¹ Salvador Lucas¹

LISBON, 2026

¹Valencian Research Institute for Artificial Intelligence
Universitat Politècnica de València
Spain

- infChecker is a tool for checking **(in)feasibility of goals**
 $\mathcal{G} = \{F_i\}_{i=1}^m$, where $F_i = (s_{ij} \bowtie_{ij} t_{ij})_{i=1}^{n_i}$.
- $\bowtie_{ij}$ represents **predicates** on terms defined by provability of goals $s \bowtie_{ij} t$ with respect to a *first-order theories* $\text{Th}_{\bowtie_{ij}}$.
- $\bowtie_{ij}$ can be one of the following predicates:
 - One (CS-)rewriting step ($\rightarrow$, $\rightarrow$).
 - Zero or more (CS-)rewriting steps ($\rightarrow^*$, $\rightarrow^*$).
 - One or more (CS-)rewriting steps ($\rightarrow^+$, $\rightarrow^+$).
 - Zero or one (CS-)rewriting steps ($\rightarrow^=$, $\rightarrow^=$).
 - Subterm ($\mid \geq$) and strict subterm ($\mid >$).
 - (CS-)Joinability ($\rightarrow^* \leftarrow$, $\rightarrow^* \leftarrow$).
 - One (CS-)convertibility step ($\leftrightarrow$, $\leftrightarrow$).
 - Zero or more (CS-)convertibility steps ($\leftrightarrow^*$, $\leftrightarrow^*$).

- The flexibility of the integration of infChecker with CONFident helped to prove **(non-)confluence** of Generalized Term Rewriting Systems (GTRSs).
- We encountered several issues in producing a compiled version that worked correctly in the new Starexec version. We hope that no problems were missed as a consequence of these issues.
- The bibliography contains links to our recent publications.

- It is written in Haskell and implements the **Feasibility Framework**. The tool is available here:

`http://zenon.dsic.upv.es/infChecker/`

- Bibliography:

GL25 R. Gutiérrez and S. Lucas. Proving and disproving feasibility with infChecker. In Proc. of the 14th International Workshop on Confluence, IWC'25, pp 38–43, 2025.

GL20 R. Gutiérrez and S. Lucas. Automatically Proving and Disproving Feasibility Conditions. In Proc. of IJCAR'2020, LNCS 12167:416–435. Springer, 2020.

Luc24 S. Lucas. Local confluence of conditional and generalized term rewriting systems. Journal of Logical and Algebraic Methods in Programming, 136, paper 100926, pages 1-23, 2024.

LG18 S. Lucas and R. Gutiérrez. Use of Logical Models for Proving Infeasibility in Term Rewriting. Information Processing Letters, 136:90-95, 2018.

Natto

Teppei Saito

JAIST

CoCo 2026

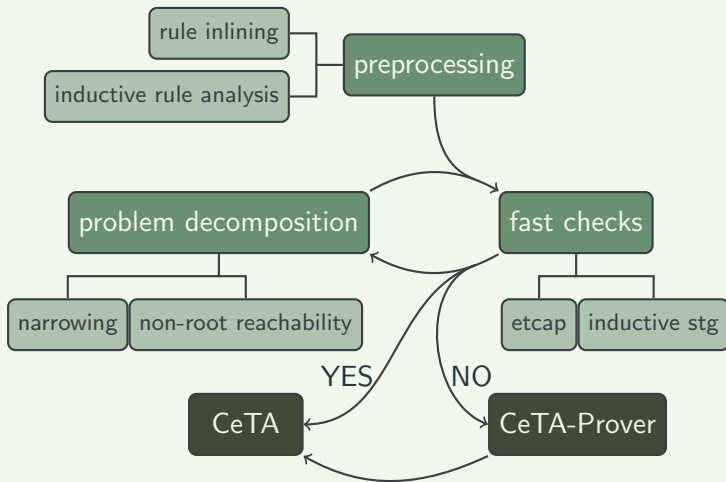
Natto — Infeasibility Tool

originally

- a prototype infeasibility tool for a paper by Kim et al. (2025)
- implemented a subset of ordering-based methods of NaTT for INF

new: generalized weighted path order as co-rewrite pair

nonreach 1.4 + CeTA-Prover 1.0



Features

- open source <https://codeberg.org/fmessner/nonreach/>
- fast infeasibility checks based on tcap and the inductive symbol transition graph
- combined with decomposition into easier subproblems
- using CeTA-Prover for rewrite sequence reconstruction
- certified Yes and No results

CoCo 2026

- INF category
- nonreach+CeTA-Prover
- nonreach+CeTA-Prover+CeTA

2025 Results



LCTRS category



2025 Results



LCTRS category

▶ previous winner: crest 2024 2025



2025 Results



LCTRS category



- ▶ previous winner: crest 2024 2025
- ▶ 2026 participants: CRaris crest

CRaris (Ver. 1.2)

a **CR** checker for LCTRSs in **ari** style

Naoki Nishida Misaki Kojima
Nagoya University, Japan

Overview

CRaris, which is a part of Crisys2, proves confluence of LCTRSs written in ARI style

- Crisys2 is a rewriting-induction tool for LCTRSs

Supported SMT-LIB Theories

Core Ints FixedSizeBitVecotrs

Implemented Confluence Criteria

- weak orthogonality (left-linearity + triviality of CPs) [Kop and Nishida, 2013]
- termination + triviality of CPs [Schöpf and Middeldorp, 2023]

Implemented DP Processors for Termination

- SCC processor
 - singleton self-looping removal processor for BV-LCTRSs [Matsumi et al, 2023]
- Call **CO3** for LCTRSs that can be considered MS-TRSs (e.g., 1526.ari) [Ver. 1.2]



crest 1.0

Jonas Schöpf

Data Lab Hell

Aart Middeldorp

University of Innsbruck



- Constrained REwriting Software Tool

- ▶ Constrained REwriting Software Tool
- ▶ confluence and termination analysis of logically constrained rewrite systems

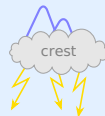
- ▶ Constrained REwriting Software Tool
- ▶ confluence and termination analysis of logically constrained rewrite systems
- ▶ open source

- ▶ Constrained REwriting Software Tool
- ▶ confluence and termination analysis of logically constrained rewrite systems
- ▶ open source
- ▶ <https://jonas.schoepf.me/crest>

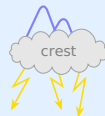
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- ▶ crest accepts input problems in (more liberal) ARI format

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- ▶ crest uses Z3 as SMT solver

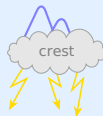
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- ▶ crest uses Z3 as SMT solver
- ▶ crest implements various confluence criteria based on (parallel) critical pairs



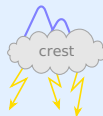
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- ▶ crest uses Z3 as SMT solver
- ▶ crest implements various confluence criteria based on (parallel) critical pairs
- ▶ crest implements simple non-confluence tests



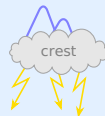
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- ▶ a constrained version of redundant rules



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- ▶ crest implements various confluence criteria based on (parallel) critical pairs
- ▶ crest implements simple non-confluence tests
- ▶ a constrained version of redundant rules
- ▶ transformations based on merging rules and splitting critical pairs



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CoCo 2026 Categories

LCTRS

2024 Results



2024 Results



▶ previous winner: CSI 2017 2018 2019 2020 2021 2022 2023 2024

2024 Results



- ▶ previous winner: CSI 2017 2018 2019 2020 2021 2022 2023 2024
- ▶ 2026 participants: CSI FORT-h FORT-h + FORTify

2024 Results



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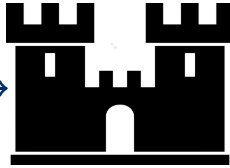


FORT-h 2.1

Aart Middeldorp

University of Innsbruck

FORT-h



property



linear variable-separated

TRS



$$\forall s \exists t (s \rightarrow^* t \wedge \neg \exists u (t \rightarrow u)) \\ \Rightarrow \exists v (s \not\rightarrow v \vee v \xrightarrow{\epsilon} t)$$



yes | no | ?

property is arbitrary formula in first-order theory of rewriting

- ▶ convenient web interface
- ▶ `https://fortissimo.uibk.ac.at/fort\(ify\)/`

- ▶ convenient web interface
- ▶ `https://fortissimo.uibk.ac.at/fort\(ify\)/`
- ▶ FORT-h won **RELIABILITY** category in 2024

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CoCo 2026 Categories

COM GCR NFP TRS UNC UNR

- ▶ convenient web interface
- ▶ [https://fortissimo.uibk.ac.at/fort\(ify\)/](https://fortissimo.uibk.ac.at/fort(ify)/)
- ▶ FORT-h won **RELIABILITY** category in 2024

CoCo 2026 Categories

COM GCR NFP TRS UNC UNR

Literature

Aart Middeldorp, Alexander Lochmann and Fabian Mitterwallner

First-Order Theory of Rewriting for Linear Variable-Separated Rewrite Systems: Automation, Formalization, Certification

Journal of Automated Reasoning 67(2), 2023

doi: [10.1007/s10817-023-09661-7](https://doi.org/10.1007/s10817-023-09661-7)

2024 Results



2024 Results



▶ previous winner: CSI 2019 2020 2021 2022 2023 2024

2024 Results



- ▶ previous winner: CSI 2019 2020 2021 2022 2023 2024
- ▶ **noko-leipzig** produced most NO answers in 2019

2024 Results



- ▶ previous winner: CSI 2019 2020 2021 2022 2023 2024
- ▶ noko-leipzig produced most NO answers in 2019
- ▶ 2026 participants: ACP ACP+CeTA CeTa-Prover+CeTA CONFident CSI CSI+CeTA

2024 Results



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- ▶ noko-leipzig produced most NO answers in 2019
- ▶ 2026 participants: ACP ACP+CeTA CeTa-Prover+CeTA CONFident CSI CSI+CeTA



CSI 1.2.8

Aart Middeldorp René Thiemann

University of Innsbruck



- ▶ open source
- ▶ <https://cl-informatik.uibk.ac.at/research/software/csi>
- ▶ CSI won TRS and RELIABILITY categories in 2025

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- ▶ <https://cl-informatik.uibk.ac.at/research/software/csi>
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CoCo 2026 Categories

NFP SRS TRS UNC UNR

- ▶ open source
- ▶ <https://cl-informatik.uibk.ac.at/research/software/csi>
- ▶ CSI won TRS and RELIABILITY categories in 2025

CoCo 2026 Categories

NFP **SRS** **TRS** UNC UNR (also in combination with CeTA)

- ▶ open source
- ▶ <https://cl-informatik.uibk.ac.at/research/software/csi>
- ▶ CSI won TRS and RELIABILITY categories in 2025

CoCo 2026 Categories

NFP SRS TRS UNC UNR (also in combination with CeTA)

New Feature in 2026

- ▶ CSI produces certificates for Okui's simultaneous critical pair criterion

2025 Results



2025 Results



- ▶ previous winners: ACP 2012 2013 2014 2015 2019
 CSI 2015 2016 2017 2018 2020 2021 2022 2023 2024 2025

2025 Results



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CSI 2015 2016 2017 2018 2020 2021 2022 2023 2024 2025
- ▶ 2026 participants: ACP ACP+CeTA AProVE CeTa-Prover+CeTA CO3 CONFident CSI
CSI+CeTA FORT-h FORT-h+FORTify Hakusan Hakusan+CeTA

2025 Results



- ▶ previous winners: ACP 2012 2013 2014 2015 2019
CSI 2015 2016 2017 2018 2020 2021 2022 2023 2024 2025
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CSI+CeTA FORT-h FORT-h+FORTify Hakusan Hakusan+CeTA



15th International Workshop on Confluence

Jan-Christoph Kassing, Alwin Schüßler, Tobias Sokolowski, and Jürgen Giesl

24.07.2026

AProVE26: Confluence Analysis in a Termination Tool

- **AProVE (Automated Program Verification Environment):**
 - Automated Termination, Complexity, and Safety Prover for Java, C, **Term Rewriting**, Integer Programs, etc.
 - **Proving Confluence:**
 - Orthogonality Check [Ohlebusch 2002]
 - Strong Confluence Check
 - Decreasing Diagrams [van Oostrom 1994]
 - Using Polynomial Interpretations [Aoto 2010]
 - Redundant Rewrite Rules [Nagele, Felgenhauer, Middeldorp 2015]
 - Modularity Results [Ohlebusch 2002]
 - Disjoint Union
 - Constructor Sharing
 - Composable
 - Newman Lemma Check (WCR + **Termination**) [Newman 1942]
 - **Disproving Confluence:**
 - Polynomial Interpretations [Aoto 2013]

- **AProVE (Automated Program Verification Environment):**
 - Automated Termination, Complexity, and Safety Prover for Java, C, **Term Rewriting**, Integer Programs, etc.
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 - Newman Lemma Check (WCR + **Termination**) [Newman 1942]
 - **Disproving Confluence:**
 - Polynomial Interpretations [Aoto 2013]

New!

New!



v0.14 Hirokawa, Hondo, Kawano, Shintani (JAIST)

Hakusan is confluence tool for TRSs, supporting:



v0.14 Hirokawa, Hondo, Kawano, Shintani (JAIST)

Hakusan is confluence tool for TRSs, supporting:

1 confluence by rule removal

LMCS 2023

IWC 2024



v0.14 Hirokawa, Hondo, Kawano, Shintani (JAIST)

Hakusan is confluence tool for TRSs, supporting:

1 confluence by rule removal

LMCS 2023

IWC 2024

2 non-confluence by tree automata & persistency

Felgenhauer and Thiemann 2017

CoCo 2025



v0.14 Hirokawa, Hondo, Kawano, Shintani (JAIST)

Hakusan is confluence tool for TRSs, supporting:

1 confluence by rule removal

LMCS 2023

IWC 2024

2 non-confluence by tree automata & persistency

Felgenhauer and Thiemann 2017

CoCo 2025

3 CeTA-certifiable proofs

CPP 2024

Confluence Proof by Rule Removal

we show confluence of TRS $\mathcal{R}$:

$$Sxyz \xrightarrow{1} xz(yz)$$

$$Kxy \xrightarrow{2} x$$

$$Ix \xrightarrow{3} x$$

$$SKK \xrightarrow{4} I$$

Confluence Proof by Rule Removal

we show confluence of TRS $\mathcal{R}$:

$$Sxyz \xrightarrow{1} xz(yz) \qquad Kxy \xrightarrow{2} x \qquad Ix \xrightarrow{3} x \qquad SKK \xrightarrow{4} I$$

1 $\text{CR}(\mathcal{R}) \iff \text{CR}(\{\mathbf{2}, \mathbf{3}\})$ as $\{\mathbf{2}, \mathbf{3}\}$ is parallel-critical-pair-closing system:

Confluence Proof by Rule Removal

we show confluence of TRS $\mathcal{R}$:

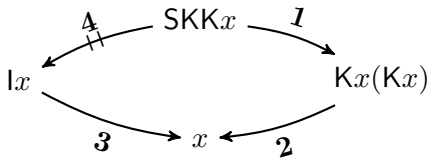
$$Sxyz \xrightarrow{1} xz(yz)$$

$$Kxy \xrightarrow{2} x$$

$$Ix \xrightarrow{3} x$$

$$SKK \xrightarrow{4} I$$

1 $CR(\mathcal{R}) \iff CR(\{\mathbf{2}, \mathbf{3}\})$ as $\{\mathbf{2}, \mathbf{3}\}$ is parallel-critical-pair-closing system:



Confluence Proof by Rule Removal

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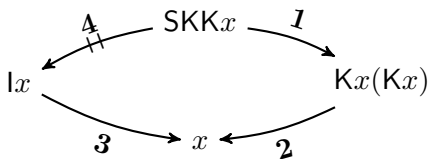
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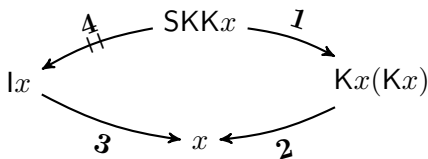
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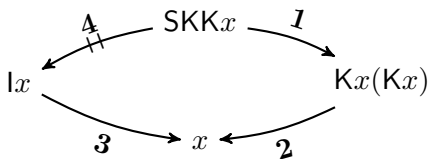
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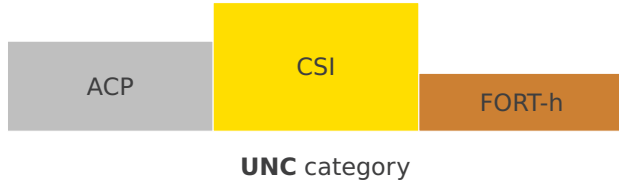


2 $CR(\{\mathbf{2}, \mathbf{3}\}) \iff CR(\emptyset)$ by rule removal version of Knuth and Bendix' criterion

3 $CR(\emptyset)$ is trivial

hence $\mathcal{R}$ is confluent

2024 Results



2024 Results



▶ previous winners: CSI 2017 ACP 2018 2019 2020 2021 2022 2023 2024

2024 Results



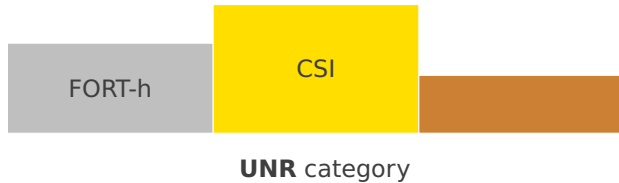
- ▶ previous winners: CSI 2017 ACP 2018 2019 2020 2021 2022 2023 2024
- ▶ 2026 participants: ACP CSI FORT-h FORT-h + FORTify

2024 Results



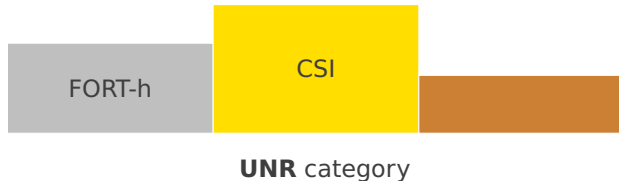
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2024 Results



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2024 Results



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2024 Results

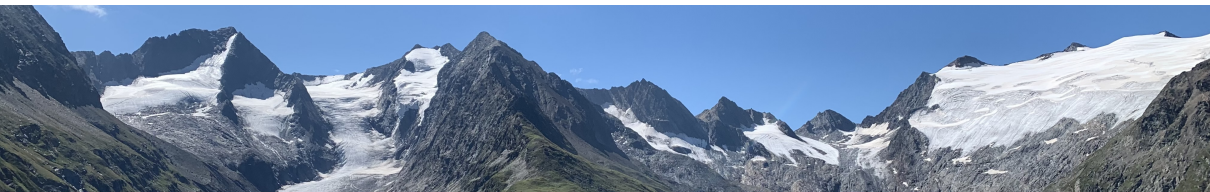


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2024 Results



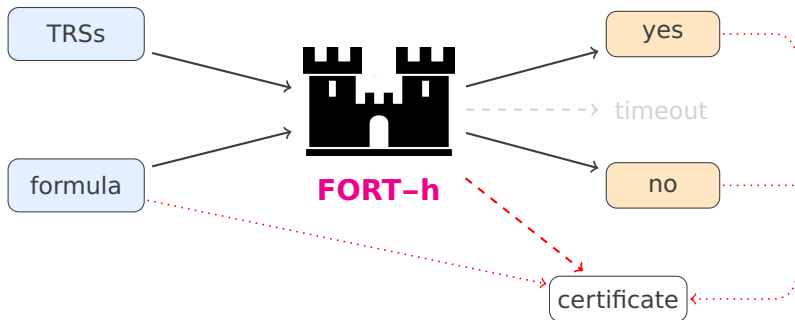
- ▶ ACP was disqualified
- ▶ previous winners: CSI 2017 2018 2019 2020 2021 2022 2024 ACP 2023
- ▶ 2026 participants: ACP CSI FORT-h FORT-h+ **FORTify**

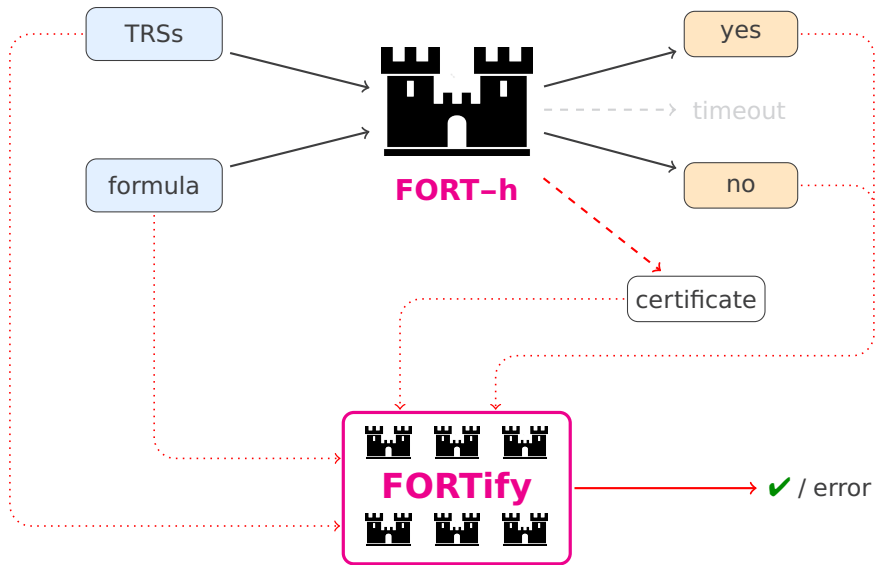


FORTify 2.1

Aart Middeldorp

University of Innsbruck





- ▶ code generated from formalization of decision procedure in Isabelle/HOL
- ▶ [https://fortissimo.uibk.ac.at/fort\(ify\)/](https://fortissimo.uibk.ac.at/fort(ify)/)

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CoCo 2026 Categories

COM GCR NFP TRS UNC UNR (with FORT-h)

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CoCo 2026 Categories

COM GCR NFP TRS UNC UNR (with FORT-h)

Literature

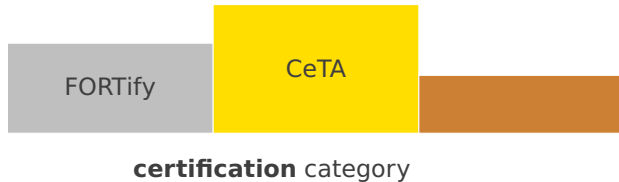
Aart Middeldorp, Alexander Lochmann and Fabian Mitterwallner

First-Order Theory of Rewriting for Linear Variable-Separated Rewrite Systems: Automation, Formalization, Certification

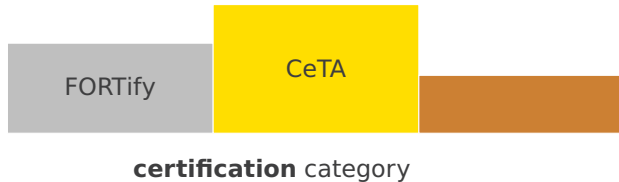
Journal of Automated Reasoning 67(2), 2023

doi: [10.1007/s10817-023-09661-7](https://doi.org/10.1007/s10817-023-09661-7)

2025 Results

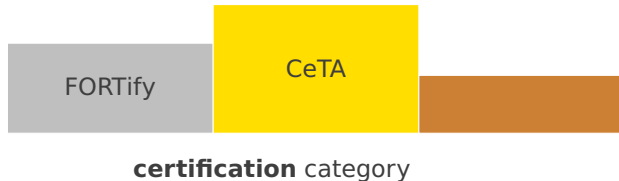


2025 Results



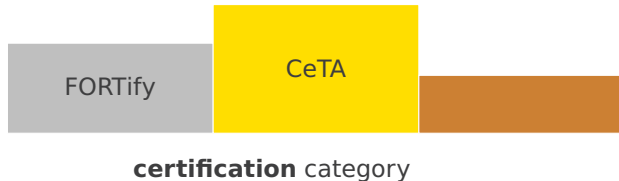
- ▶ previous winner: CeTA 2023 2024 2025

2025 Results



- ▶ previous winner: CeTA 2023 2024 2025
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2025 Results



- ▶ previous winner: CeTA 2023 2024 2025
- ▶ 2026 participants: CeTA FORTify

CeTA 3.9



- CeTA: certifier of various properties
- verified in Isabelle/HOL in IsaFoR library
- mostly developed by Computational Logic Group in Innsbruck
- several confluence techniques supported, see a complete list at:

<https://isafor-ceta.uibk.ac.at/> new URL!

- usage in CoCo: certify proofs and disproofs of
 - confluence
 - commutation
 - infeasibility
- usage in ARI-database: certify YES/NO for CR/COM/INF-tags

new: Okui's Criterion

new: Okui's Criterion adjusted to commutation

new: feasibility proofs

2025 Results



2025 Results



▶ previous winners: FORT-h 2023 2024 CSI 2025

2025 Results



- ▶ previous winners: FORT-h 2023 2024 CSI 2025
- ▶ 2026 participants: ACP CeTA-Prover CeTA-Prover+nonreach CSI FORT-h Hakusan

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and the 2026 winners are ...



<https://ari-cops.uibk.ac.at/liveview/2026.html>

Outline

1. Acknowledgements

2. History

3. 2026

4. Awards

5. Outlook



the steering committee of the

15th Confluence Competition

awarded

tool by *authors*

the

First Place in the ? category

Lisbon, 24 July 2026

Awards

- ▶ top three tools in each category (excluding tool + certifier)

Awards

- ▶ top three tools in each category (excluding tool + certifier)
- ▶ certifiers based on total number of certified answers

CERTIFICATION

Awards

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- ▶ certifiers based on total number of certified answers
- ▶ top three tools that produce most certifiable answers

CERTIFICATION

RELIABILITY

Awards

- ▶ top three tools in each category (excluding tool + certifier)
- ▶ certifiers based on total number of certified answers
- ▶ top three tools that produce most certifiable answers
- ▶ certificates will be distributed via

CERTIFICATION

RELIABILITY

<https://project-coco.uibk.ac.at/2026/participants/>

FLoC Olympic Games Awards

FLoC Olympic Games Awards

- ▶ CoCo Progress Award
- ▶ CoCo Secret Problem Award

FLoC Olympic Games Awards

- ▶ CoCo Progress Award

awarded to tool that solves most problems tagged as interesting, counted across all categories; problem is tagged as interesting if there is at least one year where problem was scheduled during full run and no tool was able to solve it

- ▶ CoCo Secret Problem Award

FLoC Olympic Games Awards

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- ▶ Award Ceremony during banquet on July 28

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infChecker

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- 5. Outlook**

Outlook

- ▶ CoCo 2027 during IWC 2027 ?
- ▶ T-shirt ?
- ▶ revive previous categories ?

▶ HRS



▶ NRS



Outlook

- ▶ CoCo 2027 during IWC 2027 ?
- ▶ T-shirt ?
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▶ HRS



▶ NRS



Aart Middeldorp	University of Innsbruck	2019–2026
Naoki Nishida	Nagoya University	2020–2027
Teppei Saito	JAIST	2023–2026
René Thiemann	University of Innsbruck	2024–2027
Sarah Winkler	Free University of Bozen–Bolzano	2026–2029

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CoCo SC

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Teppei Saito	JAIST	2023 – 2026
René Thiemann	University of Innsbruck	2024 – 2027
Sarah Winkler	Free University of Bozen–Bolzano	2026 – 2029

CoCo Bylaws

- ① The steering committee (SC) is responsible for all affairs concerning the confluence competition:
- ▶ deciding the date and location of the next competition,
 - ▶ deciding the categories in the next competition,
 - ▶ selecting panel members (who provide secret digits that determine the problems selected for the next competition),

- ▶ running the live competition and exporting the results,
 - ▶ collecting one-page tool descriptions for inclusion in the proceedings of IWC,
 - ▶ performing a full run with corrected tools within one month of the live competition and exporting the tools to CoCoWeb,
 - ▶ maintaining the infrastructure of the confluence competition, including COPS and CoCoWeb,
 - ▶ publicity.
- 2 SC members must have been involved in a tool that participated in a past competition.
 - 3 SC members can serve at most two consecutive terms. A term consists of four consecutive competitions.
 - 4 The SC selects its own chair.
 - 5 Decisions in the SC (if not by global agreement) are by simple majority vote. In case of a draw the chair decides.

- ▶ running the live competition and exporting the results,
 - ▶ collecting one-page tool descriptions for inclusion in the proceedings of IWC,
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Postdoc Position in Innsbruck (3 years)

- ▶ available from 1 October 2026 (automated reasoning, term rewriting, verification)
- ▶ 4 hours of teaching per week during semester
- ▶ application period: July 31 – August 20 MIP-15908

<https://lfuonline.uibk.ac.at/public/karriereportal.home>

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