



# COQ DEVELOPMENT TEAM SESSION

**Coq Development Team**

Coq Workshop 2018

Oxford, UK

July 8th, 2018

# OUTLINE

1. Coq 8.7
2. Coq 8.8
3. Coq 8.9!
4. Coq Consortium
5. Coq Community proposal (T. Zimmermann)
3. Q & A

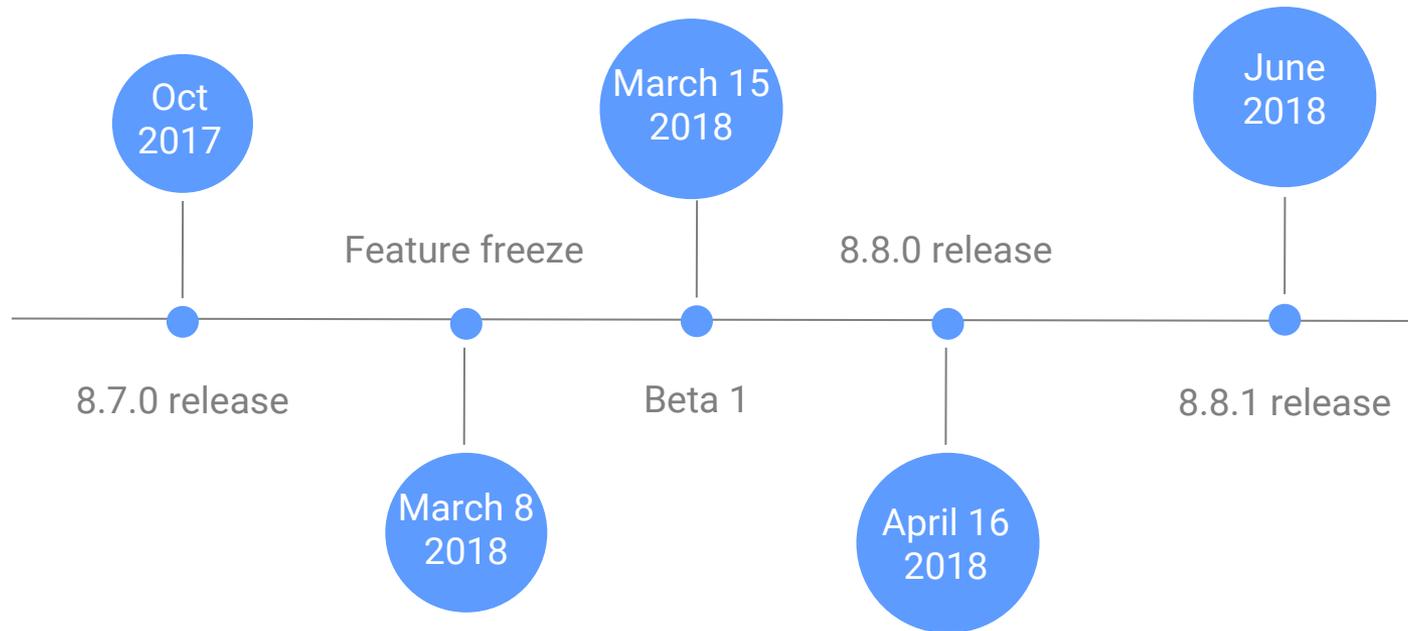
# Coq 8.7 (October 2017)

- New Features:
  - Cumulative Inductive Types (A. Timany, M. Sozeau)
  - SSReflect integration (G. Gonthier, E. Tassi, A. Mahboubi, M. Dénès)
  - New e- variants of tactics (H. Herbelin), ...
  - coq\_makefile 2.0 (E. Tassi)
  - ... see CHANGES
- Implementation and API changes:
  - Terms-up-to-existentials (EConstr, P.M. Pédro, M. Dénès)
  - **A whole lot** of code clean-up and perf improvements (collective)
  - Backtrack on the “Sigma” interface
  - STM and IDE APIs (E. J. Gallego Arias, E. Tassi)

# Coq Porting & Performance

- VST: ~10% faster on 8.8 than 8.7, 2.5x faster in 8.6 than 8.5, 2x faster than 8.4. (reports by A. Appel)
- Iris: ported to 8.7 with a single change (due to a bugfix?), 10-12% faster (report by R. Jung)
- Libraries in the CI: Mathcomp, Fiat, MathClasses, C-CoRN, HoTT, CompCert, CoLoR, Iris, Equations...
- Coq Package Index: <https://coq.inria.fr/packages>

# Coq 8.8 Schedule



# Coq 8.8 Features

- Mangling of generated names mode
- Tacticals for profiling/timing tactics
- Universes: user-level enhancement (naming and printing) and more relaxed conversions.
- Notations with patterns, recursive notations improvements
- Porting documentation to Sphinx (help was very welcome!)
- ... see CHANGES or

<https://github.com/coq/coq/releases/tag/V8.8.0>

Active developer projects: LTac 2.0, ELPI, SerAPI, Equations, JsCoq, ...

## Coq 8.9 roadmap

- Unifying the unification algorithms
- Primitive integers and arrays
- Small inversions in pattern-matching compilation
- Custom entries / tables for notations
- Attributes on commands

Future/Postponed: Porting Function to Equations,  
Induction-induction, induction-recursion

# Development news

- Systematic use of PRs and CI
- Open development practices
- Contributing guide
- Moved repository, wiki and bugtracker to github.com

# Coq Consortium

- Many ambitious projects using Coq
- Ambitious projects come with demands on the system
  - Open development model, efficiency, documentation
  - Incorporate state-of-the-art research ideas
- Shortage of manpower
- A framework to let the user community share the cost
  - A legal structure to receive funds and hire engineers
  - A communication hub to gather needs and provide solutions
- Support software services and Consortium membership
  - Support contract: easy to claim on research funding proposals
  - Service: Coq improvement, help in bug finding and project evolution
  - Consortium structure to be defined with industrial partners

## Coq Consortium (2)

We are looking for sponsors and partners!

- In academia: include support costs in your research funding proposals
- In industry: consider becoming member of the consortium
- The consortium can also receive gifts

Any questions: contact Yves Bertot or Maxime Dénès

<https://coq.inria.fr/consortium>

**Thank you!**

*inria*  
informatics mathematics