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1st TAILOR Workshop @ ECAI2020

Foundations of Trustworthy AI integrating Learning, Optimisation and Reasoning

1st TAILOR Workshop 2020

- **Purpose**: Bring groups and researchers together to discuss the state of the art and the latest advances in the integration of **learning**, **optimisation** and **reasoning** to provide the **scientific foundations for Trustworthy AI**.
- **Topics**:
  - Trustworthiness
  - Paradigms for integrating learning, optimization and reasoning
  - Deciding and learning how to act
  - Reasoning and learning in a social context
  - AutoAI

TAILOR WS Organizers

- Fredrik Heintz, Linköping University, Sweden
- Luc De Raedt, KU Leuven, Belgium
- Peter Flach, University of Bristol, UK
- Hector Geffner, ICREA and Universitat Pompeu Fabra, Spain
- Fosca Giannotti, National Research Council, Pisa, Italy
- Holger Hoos, Leiden University, The Netherlands
- Michela Milano, University of Bologna, Italy
- Barry O'Sullivan, University College Cork, Ireland
- Ana Paiva, University of Lisbon, Portugal
- Marc Schoenauer, INRIA, France
- Philipp Slusallek, DFKI, Germany
- Joaquin Vanschoren, Eindhoven University of Technology, The Netherlands

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TAILOR WS Submissions & PC

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- 49 submissions reviewed by 2+ reviewers
- 36 papers accepted
- 14 short and 22 long presentations

- Giuseppe Attardi — Università di Pisa
- Roman Barták — Charles University
- Maria Bielikova — Slovak University of Technology
- Vicent Botti — Universitat Politècnica de València
- Miguel Couceiro — INRIA
- Saso Dzeroski — Jozef Stefan Institute
- Huascar Espinoza — CEA LIST
- Elisa Fromont — Université de Rennes 1
- Luis Galárraga — Inria
- Maria Garcia De La Banda — Monash University
- Randy Goebel — U Alberta
- Marco Gori — University of Siena
- Dimitrios Gunopulos — UoA
- Jose Hernandez-Orallo — Universitat Politècnica de València
- Andreas Herzig — CNRS, IRIT, Univ. Toulouse
- Lars Kotthoff — University of Wyoming
- Sarit Kraus — Bar Ilan University
- Krzysztof Krawiec — Poznan University of Technology
- Gerhard Lakemeyer — RWTH Aachen University
- Andrea Lodi — École Polytechnique de Montréal
- Pierre Marquis — CRIL, U. Artois & CNRS
- André Meyer-Vitali — TNO
- Ann Nowé — Vrije Universiteit Brussel
- Andrea Passerini — University of Trento
- Francesca Rossi — IBM
- Marie-Christine Rousset — Université Grenoble Alpes
- Carles Sierra — IIIA
- Silvan Sievers — University of Basel
- Alexandre Termier — Université de Rennes 1
- Sylvie Thiebaux — ANU
- Josef Urban — Czech Technical University in Prague
- Pascal Van Hentenryck — Georgia Institute of Technology
- Emmanuel Vincent — INRIA
- Michael Wooldridge — University of Oxford
- Neil Yorke-Smith — Delft University of Technology

TAILOR WS Program

- Day 1 (Friday Sep 4) ***All times in CEST***
  - 9.00 – 10.30 Introduction to TAILOR (Fredrik Heintz)
  - 10.30 – 10.45 BREAK
  - 10.45 – 12.15 CLAIRE event
  - 12.15 – 13.45 LUNCH
  - 13.45 – 15.15 Theme: Trustworthy AI (Fosca Giannotti)
  - 15.15 – 15.30 BREAK
  - 15.30 – 17.00 Theme: Social (Ana Paiva)
- Day 2 (Saturday Sep 5) ***All times in CEST***
  - 9.00 – 10.30 Theme: Acting (Hector Geffner)
  - 10.30 – 10.45 BREAK
  - 10.45 – 12.15 Theme: Paradigms (Luc de Raedt)
  - 12.15 – 13.45 LUNCH
  - 13.45 – 15.15 Theme: AutoAI (Holger Hoos)
  - 15.15 – 15.30 BREAK
  - 15.30 – 17.00 TAILOR Going forward (Fredrik Heintz)

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TAILOR ICT-48 Network

Foundations of Trustworthy AI integrating Learning, Optimisation and Reasoning

TAILOR ICT-48 Network

- **TAILOR** brings together **leading AI research centres** from **learning**, **optimisation** and **reasoning** together with **major European companies** representing **important industry sectors** into a **single scientific network** addressing the **scientific foundations** of **Trustworthy AI** to **reduce** the **fragmentation**, **boost** the **collaboration**, and **increase** the **AI research capacity** of Europe as well as **attracting and retaining talents** in Europe.

Basic Facts

- Type of action: RIA (Research and Innovation Actions)
- Proposal number: 952215
- Starting date: September 1st 2020
- Duration: 36 months
- # Partners: 54
- Coordinator: Fredrik Heintz, Linköping University (Sweden)
- Total Budget: 12 M€

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Scientific Vision

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- **AI should be trustworthy** and developed in a **human-centric** way with the goal of improving individual and societal well-being.
- To be trustworthy AI systems should be **lawful**, **ethical** and **robust**.
- We intend to do the research necessary to **develop the scientific** and **technical foundations** to achieve **trustworthy AI**.
- The ability to **learn**, to **reason** and to **optimize** are central and essential for AI in general and trustworthy AI in particular.
- The network will work to **bridge the gap between learning, reasoning and optimization**, and to **unite** these approaches in **common frameworks** that pave the way towards more powerful trustworthy AI systems.

TAILOR Consortium

- 54 partners from 18 EU countries (AT, BE x2, CZ x2, DE x8. ES x4, FI, FR x6, GR, IE, IT x8, LU, NL x6, PL, SE x2, SI, UK x4), Israel and Switzerland x2.
- More than 60 network members.
- 23 Core partners (LiU, CNR, INRIA, UCC, KUL, UOR, LEU, IST-UL, UPF, UNIBO, BIU, TUE, CNRS, JSI, TUDA, UNIBRIS, ALU-FR, UOX, UNITN, DFKI, EPFL, FBK, CINI)
- 21 Partners (VUB, CUNI, CEA, CRIL, CVUT, TUD, FhG, TU Graz, IIIA-CSIC, LIRA, UOA, NEO-UMA, PUT, RWTH, slovak.AI, TNO, UniPI, UGA, UNIBAS, UPV, ICL)
- 10 Industry partners (VW, ENG, Tieto, Philips, EDF, ABB, ZF, LIH, CBS, Bosch)

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TAILOR Objectives

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Establish	Define and maintain	Create	Build	Progress	Increase
O1: Establish a strong pan-European network of research excellence centers on the Foundations of Trustworthy AI	O2: Define and maintain a unified strategic research and innovation roadmap for the Foundations of Trustworthy AI	O3: Create the capacity and critical mass to develop the scientific foundations for Trustworthy AI	O4: Build sustained collaborations with academic, industrial, governmental, and community stakeholders on the Foundations of Trustworthy AI	O5: Progress the Scientific State-of-the-Art for the Foundations of Trustworthy AI	O6: Increase Knowledge and Awareness of the Foundations of Trustworthy AI across Europe

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Basic Research Program

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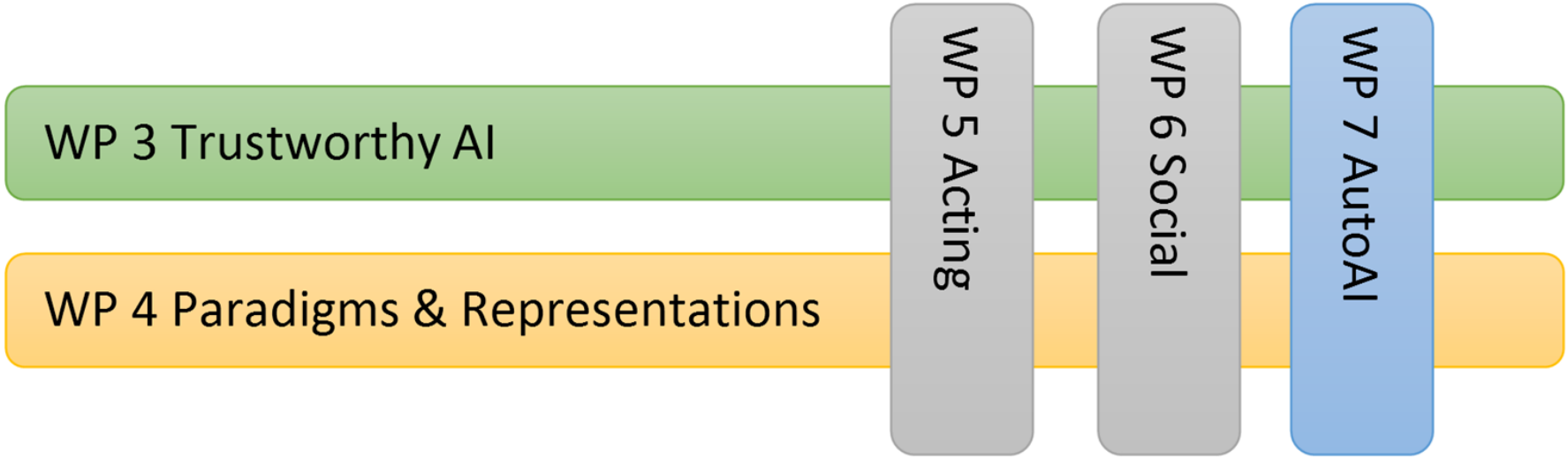
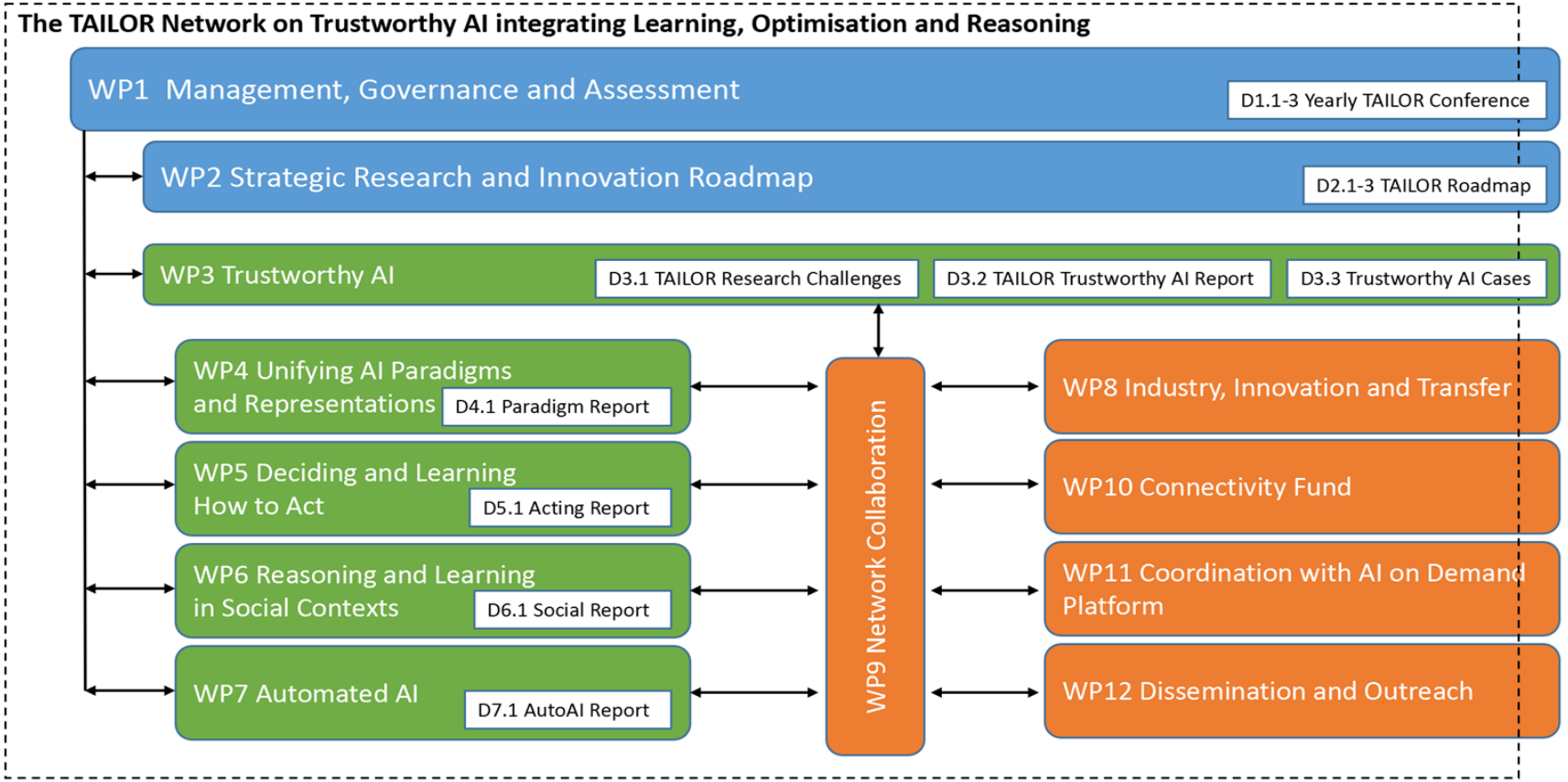


Conceptual Overview



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TAILOR Organization

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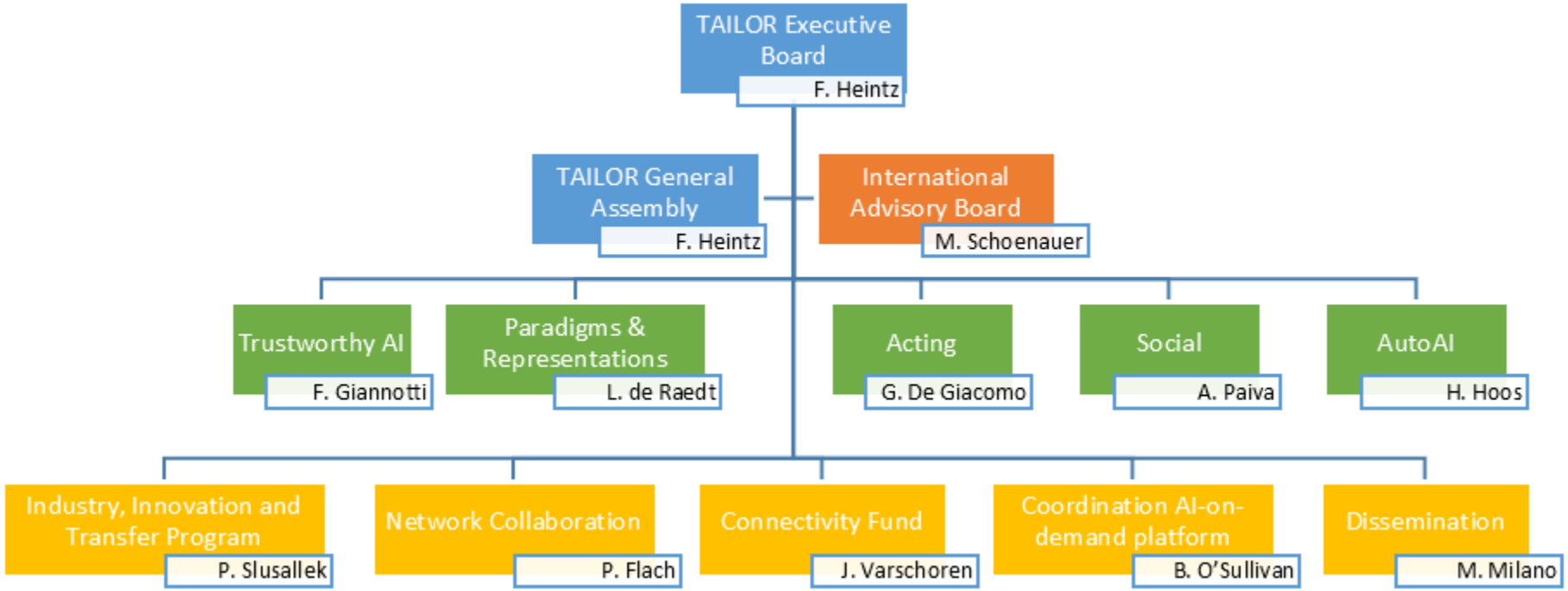

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TAILOR Key Takeaways

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TAILOR brings together leading AI research centres from learning, optimisation and reasoning together with major European companies representing important industry sectors into a single scientific network addressing the scientific foundations of Trustworthy AI to reduce the fragmentation, boost the collaboration, and increase the AI research capacity of Europe as well as attracting and retaining talents in Europe.

- 54 research excellence centres from 20 countries across Europe
- Four instruments
  - An ambitious research and innovation roadmap
  - Five basic research programs integrating learning, optimisation and reasoning in key areas for providing the scientific foundations for Trustworthy AI
  - A connectivity fund for active dissemination to the larger AI community
  - Network collaboration activities promoting research exchanges, training materials and events, and joint PhD supervision