

COST Action IC1201

2012 | 2016

# BETTY

## Behavioural Types for Reliable Large-Scale Software Systems

In the past, computing consisted of isolated computers processing data. Programming languages quickly adopted data types in order to codify the structure of data and support the development of reliable data-processing software. Today, computing depends on communication between co-operating components, and verification of dynamic properties is essential. Behavioural types include: types for structured communication, such as session types; contracts expressed as types; and types for properties such as termination, liveness and deadlock-freedom. They have the potential to support the development of reliable communication-oriented software, but have not yet been systematically put into practice.

### Objectives

- To develop the domain of certified software for global services, by incorporating behavioural types into programming languages and software engineering tools for automatically checking behavioural properties of communicating software systems.
- To co-ordinate European research activity on the theory and application of behavioural types, and the deployment of programming languages and tools based on them.
- To build an effective working community of European researchers in this area.
- To encourage the industrial adoption of advanced programming languages and tools.

### Working Groups

- **WG 1: Foundations**  
(Chairs: Hans Hüttel & Vasco Vasconcelos; Vice-Chair: Ivan Lanese)  
*developing the theory of behavioural types in order to support their applications*
- **WG 2: Security**  
(Chair: Ilaria Castellani; Vice-Chair: Hugo Vieira)  
*integrating behavioural types with techniques for security analysis*
- **WG 3: Languages**  
(Chair: Giuseppe Castagna; Vice-Chairs: Luca Padovani & Nobuko Yoshida)  
*implementing behavioural types in practical programming languages*
- **WG 4: Tools and Applications**  
(Chair: Thomas Hildebrandt; Vice-Chair: Nikolaos Sismanis)  
*developing software engineering tools and applying them to realistic case studies*

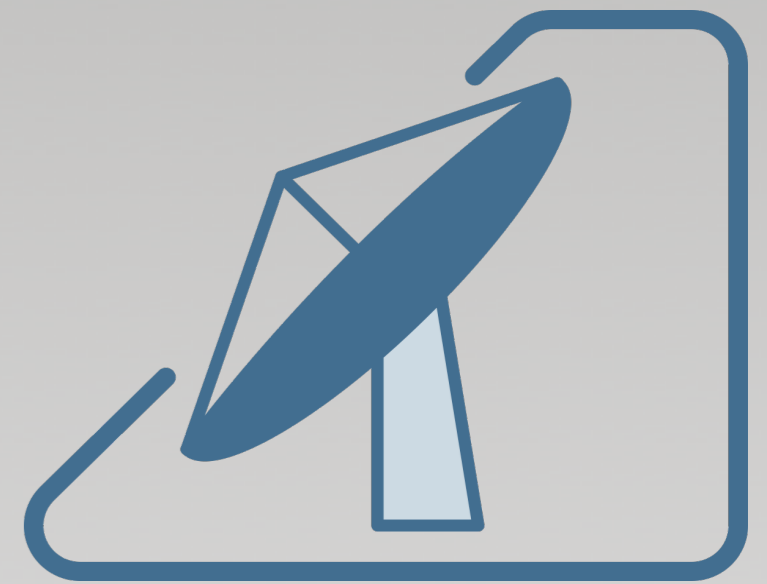
### Activities

- 1<sup>st</sup> International Workshop on Behavioural Types (BEAT) at POPL, January 2013.
- WG meetings: ETAPS, March 2013; SEFM, September 2013; ETAPS & CONCUR 2014.
- 2<sup>nd</sup> International Workshop on Behavioural Types (BEAT 2) at SEFM, September 2013.
- Further International Workshops on Behavioural Types in 2014 and beyond.
- Funding for Short-Term Scientific Missions between participating countries.
- International Summer School on Behavioural Types, 2014.

### Get Involved

- Contact the Action Chair, Simon Gay, with details of your interests.

Information and  
Communication  
Technologies  
(ICT)



Participating countries: 22

BA, CY, DE, DK, EE, ES, FR, GR, HR, IE, IT, LT, MK, MT, NL, NO, PL, PT, RO, RS, SE, UK

### Contact details

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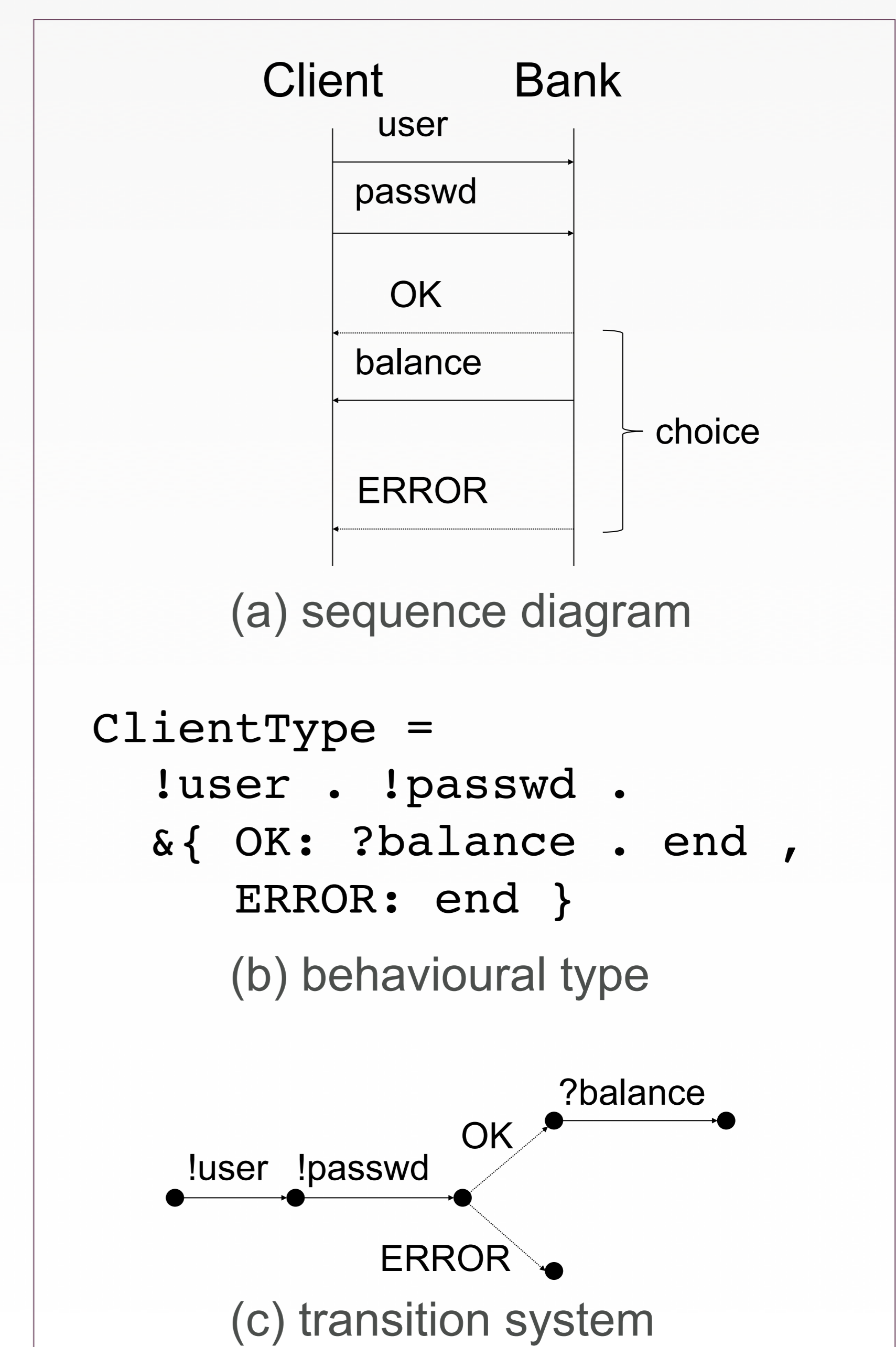
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[www.behavioural-types.eu](http://www.behavioural-types.eu)



Describing structured communication.



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