The Kompics Component Model

Background

• A framework for building distributed systems

• Inspired by this book

• Composing protocols from reusable, concurrent, reactive components
The Kompics Component Model
Ports and Channels

- Event-based communication between components (message-passing concurrency)

- Port types form “APIs” by specifying which events may be triggered on their instances (ports) (and which way).

- Ports are connected by bidirectional channels.

- Channels forward events in FIFO order with exactly-once semantics.

- Components either provide or require a port.
Components can have multiple Ports of either type.

Components have internal state.

Events are processed by Handlers which match a single event type (and its subtypes).

A Handler must be subscribed to a port to receive events.
Each port type defines which events may be pass through it.

It also defines the direction they may pass: indication or request.

An event must be triggered in outgoing direction.

A Handler must be subscribed to a port that passes incoming events of its type.
The Kompics Component Model Composition