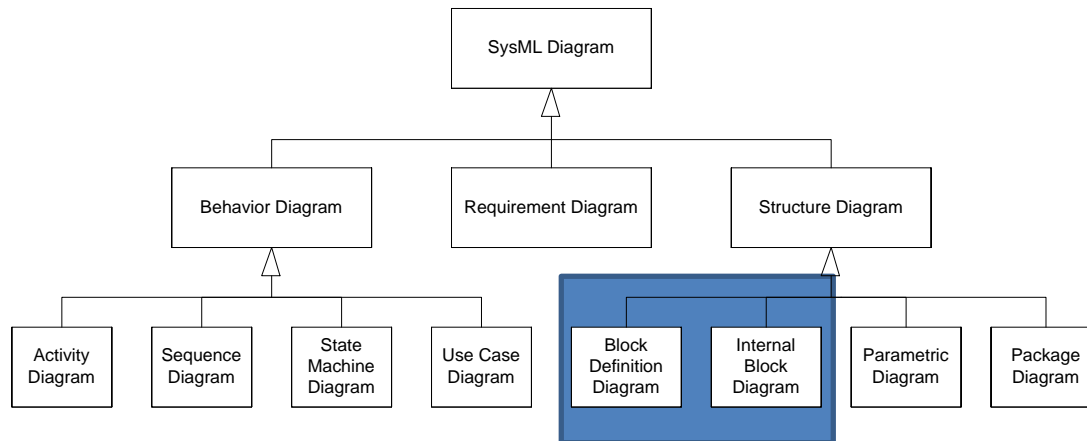


SysML Structural Diagrams 3

Introduction to Systems Engineering
I2ISE

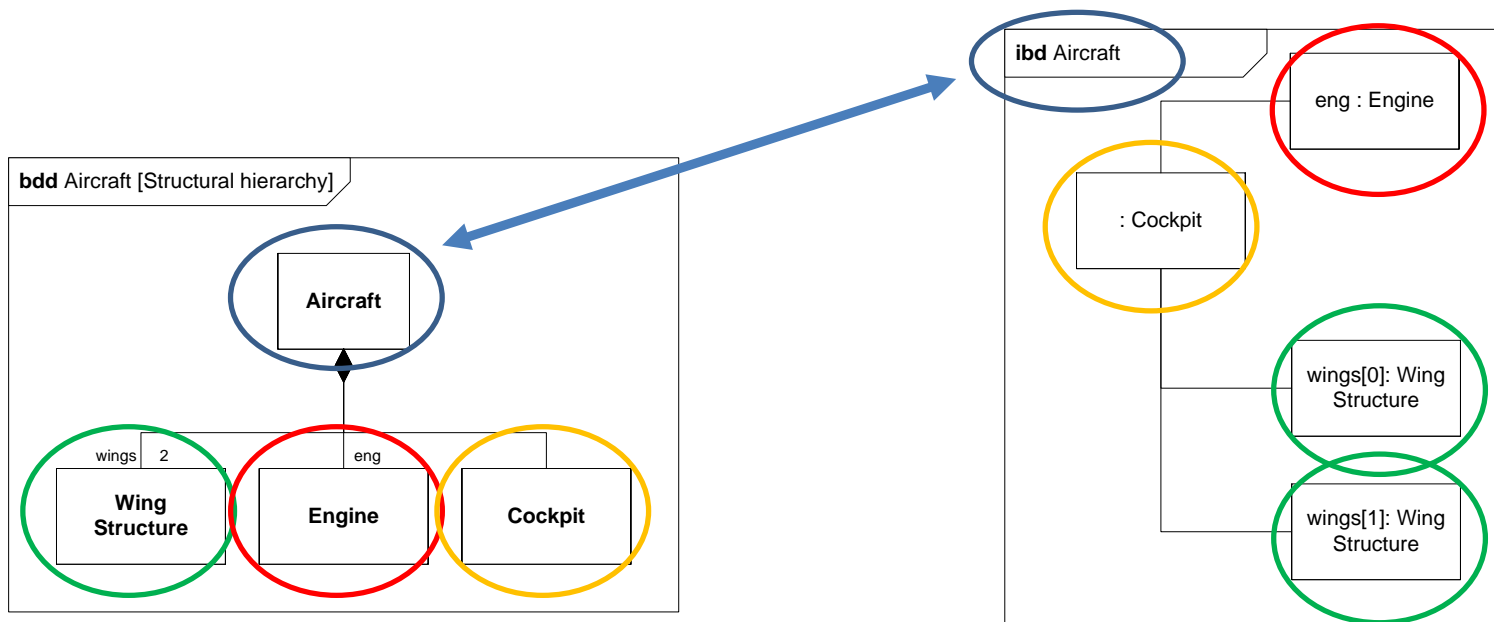
SysML

Block Definition Diagrams & Internal Block Diagrams



SysML: Internal Block Diagram

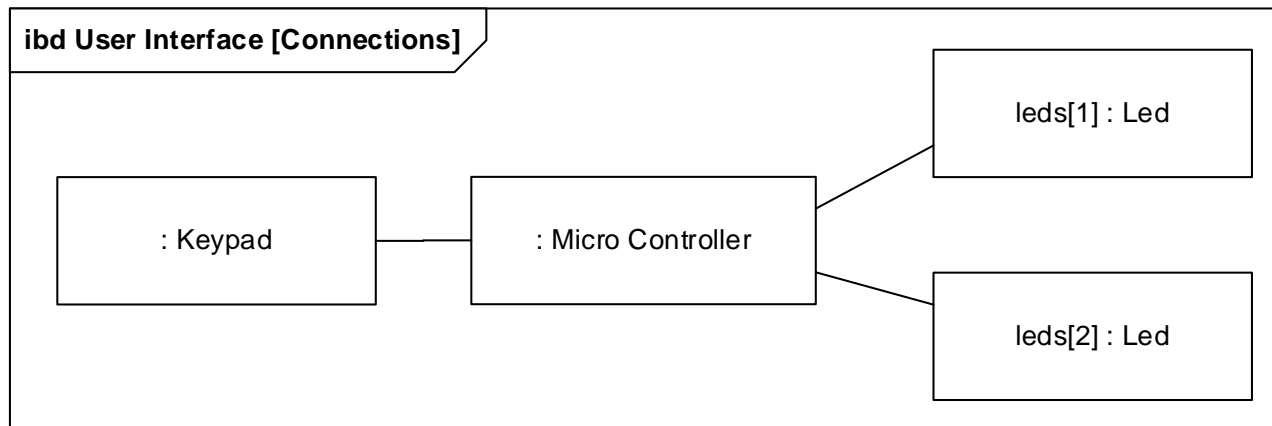
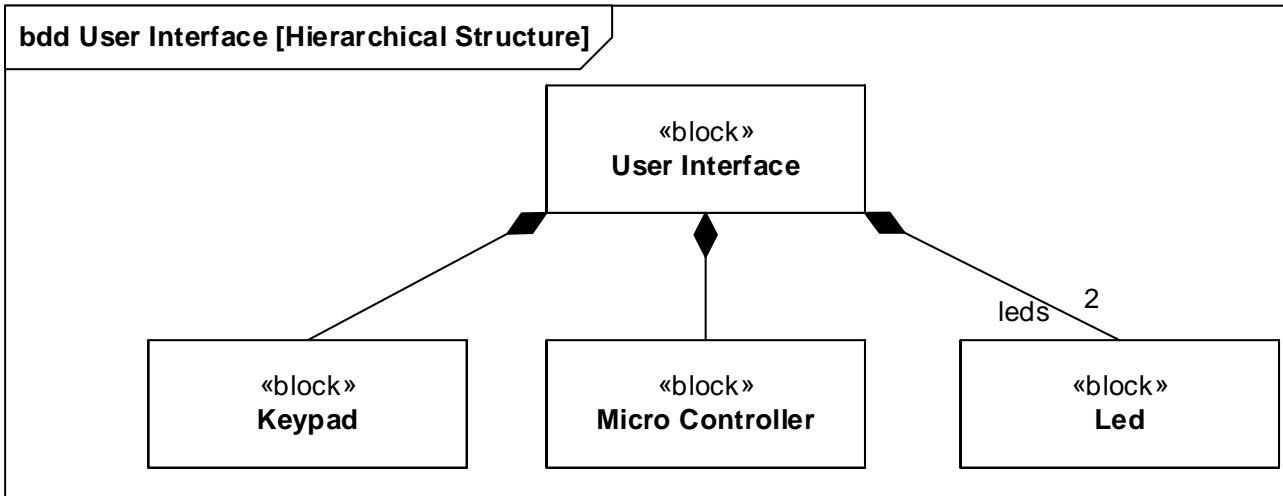
- An *Internal Block Diagram (ibd)* is used to define
 - the *interconnection* and *interfaces* of the parts of a block, and
 - the *information flow* between parts
- An ibd **always** relates to a block on a bdd. It shows the internal connections of the block's constituents



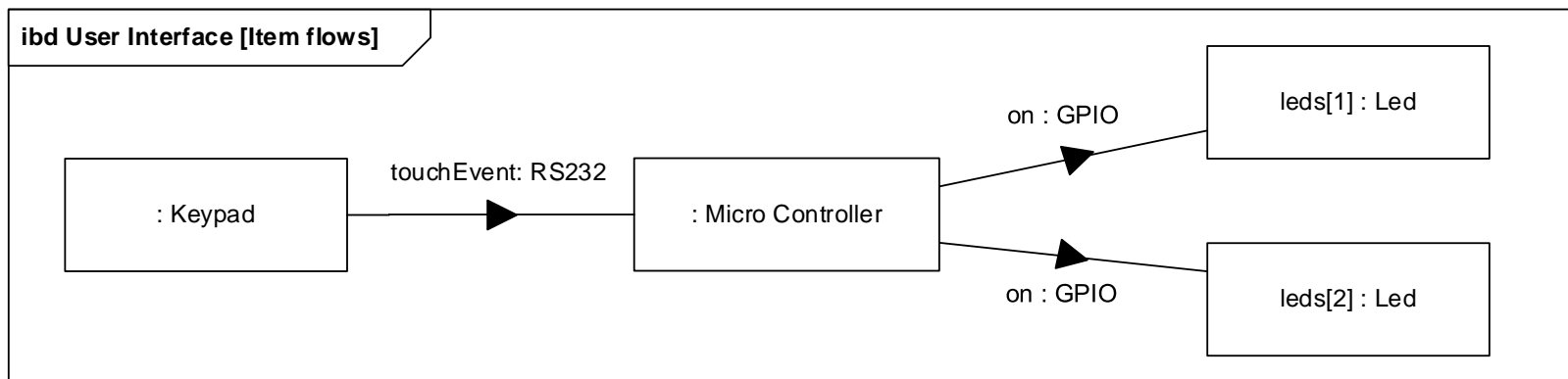
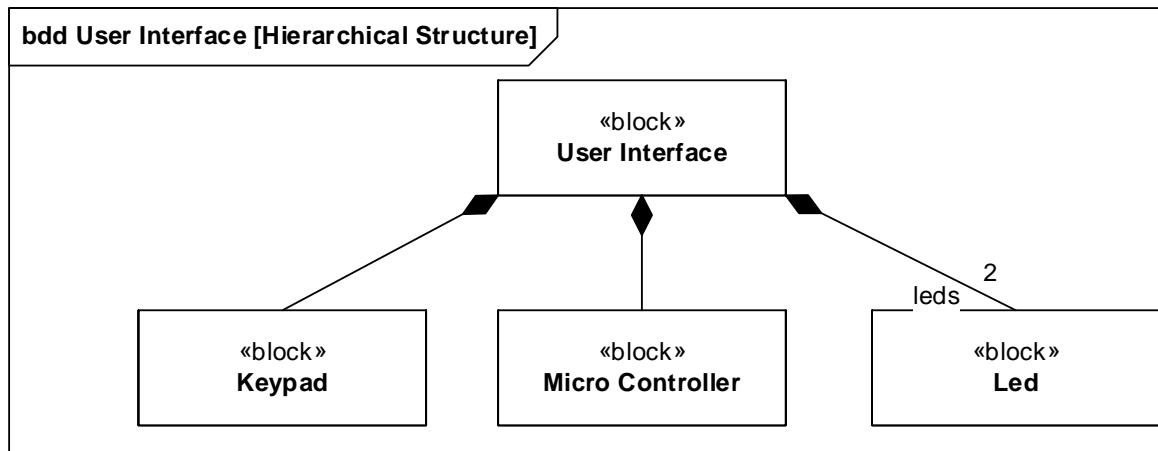
Modeling connections

- We would like to express more about the *connection* between parts on the ibd
 - This would help us to define the *interface* of the parts
- Connections
- Item flows
- Flow Ports
 - Atomic Flow Ports
 - Nonatomic Flow Ports

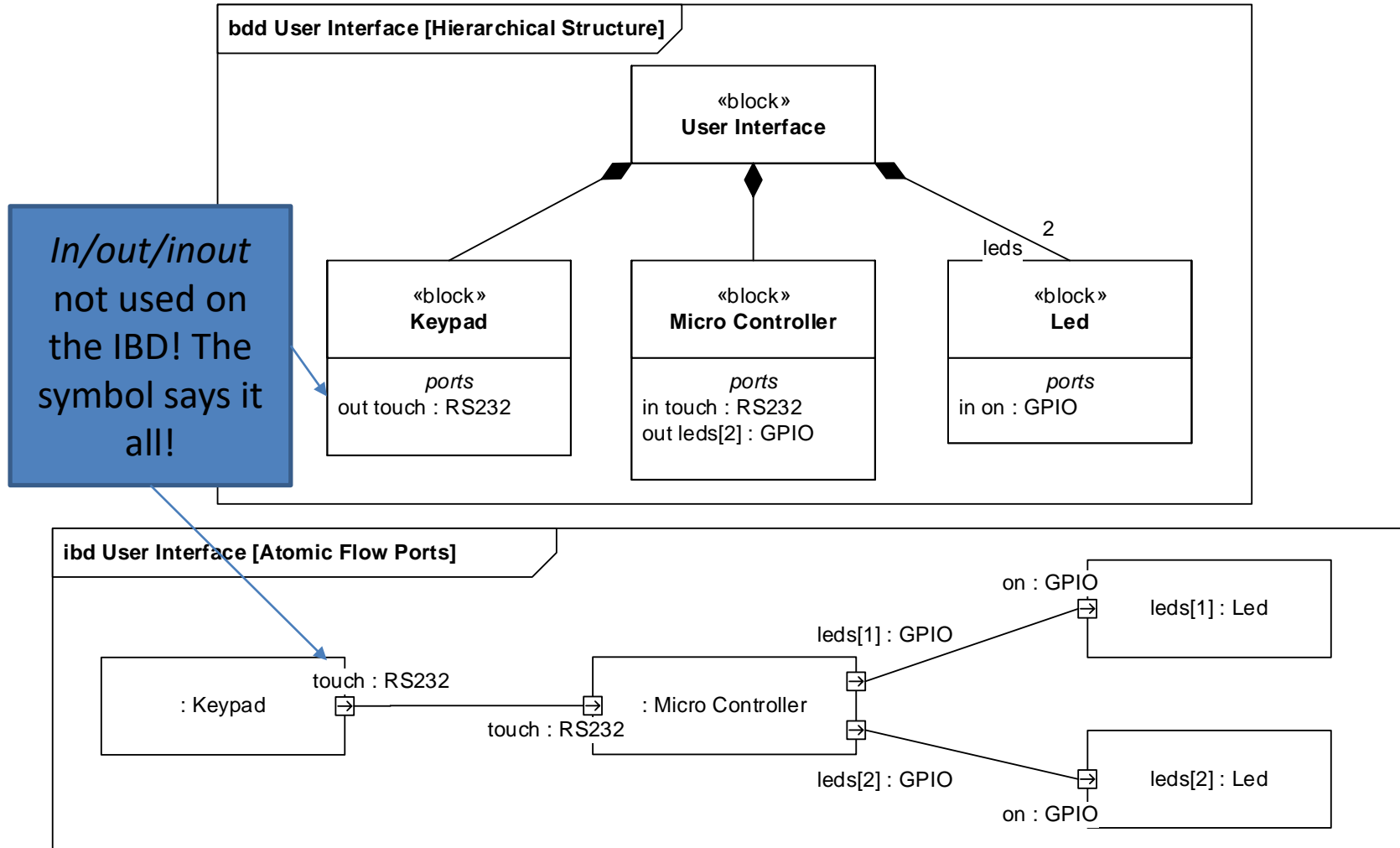
Simple connections



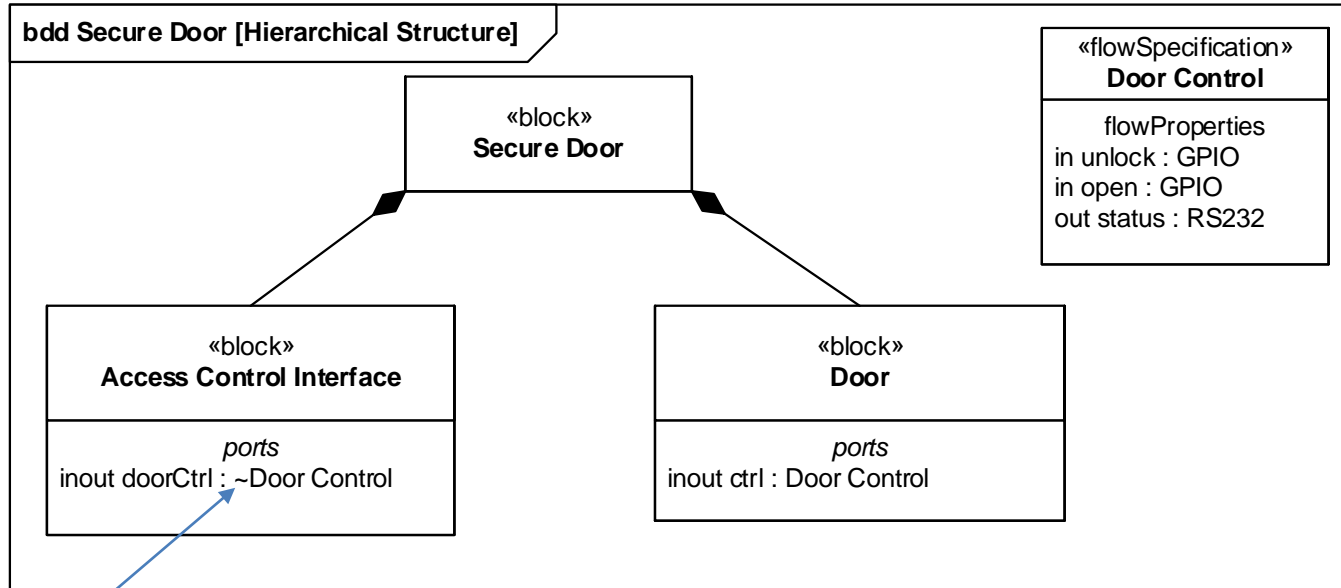
Flow Items



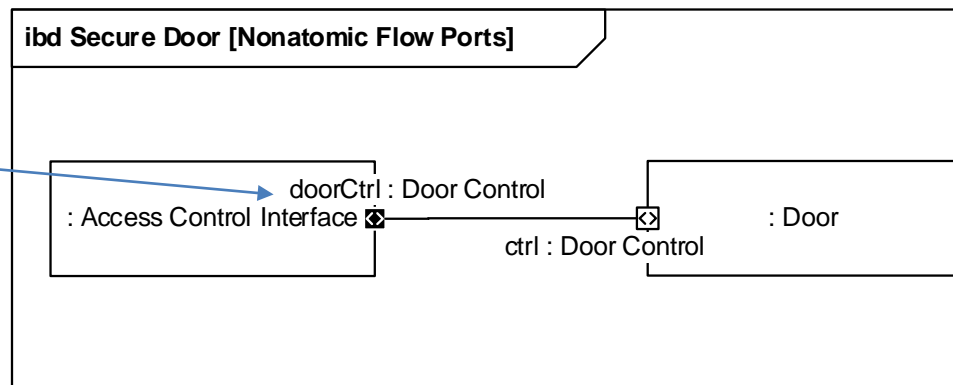
Atomic Flow Ports



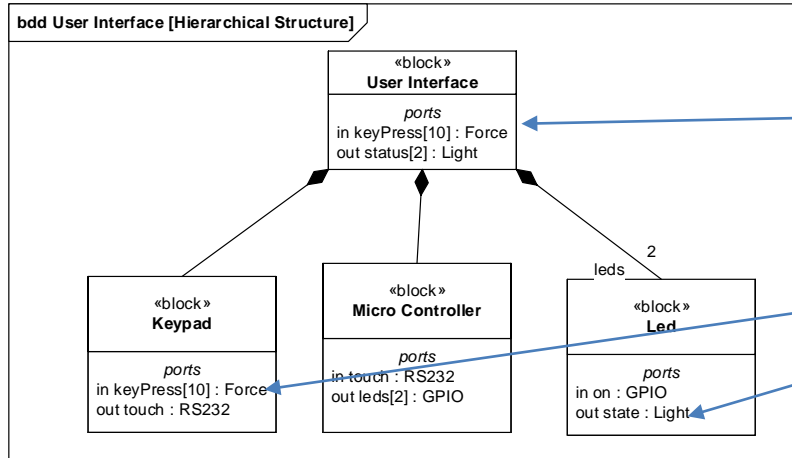
Nonatomic Flow Ports



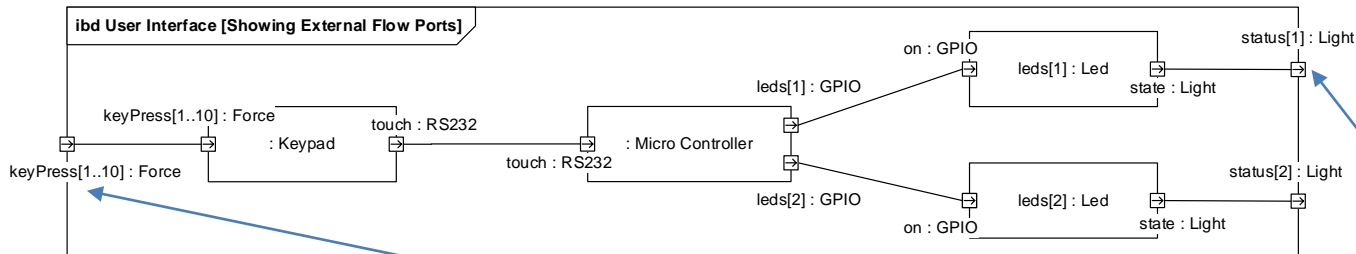
The ~ (tilde) is not used on the IBD! The symbol says it all!



Ports to the outside

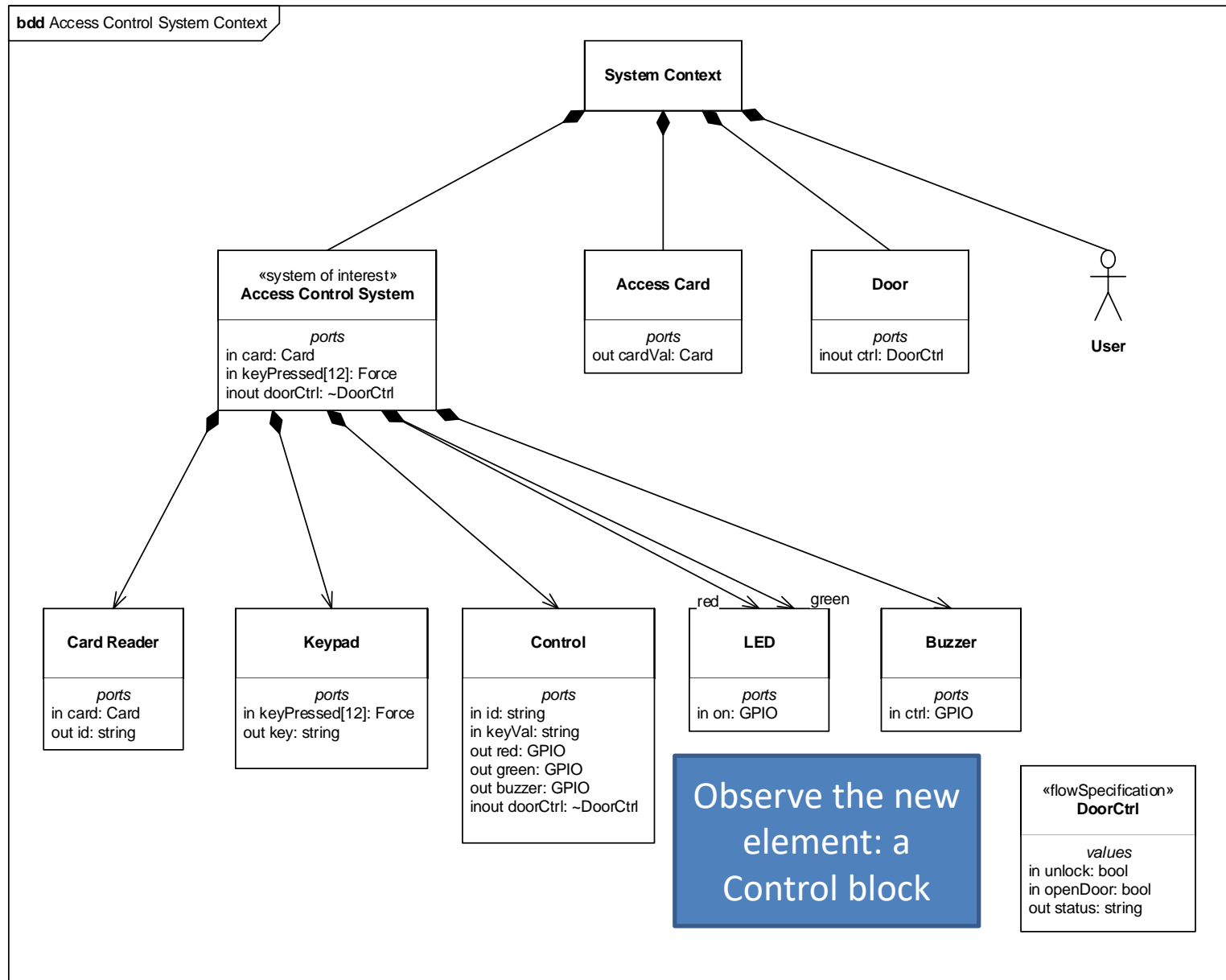


These ports must be implemented by one of the parts on the BDD!

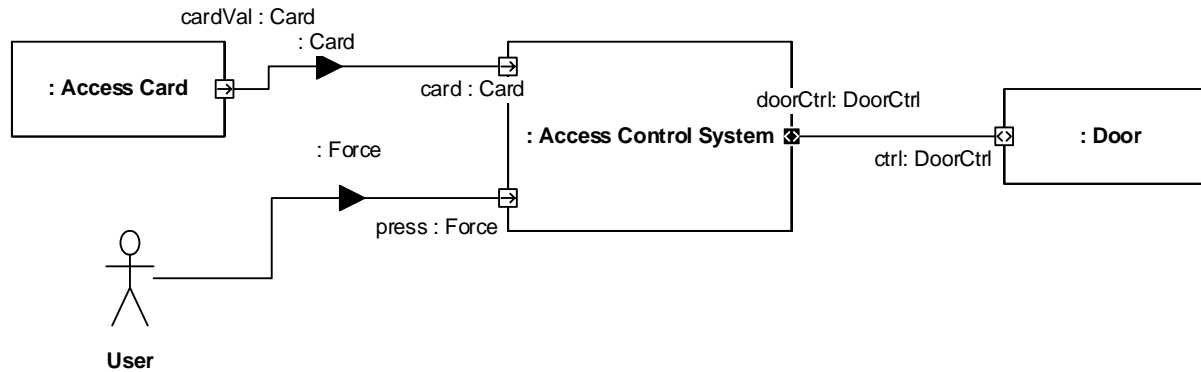


They are shown on the IBD as connected to the outside

Exercise from last – solutions on next slide

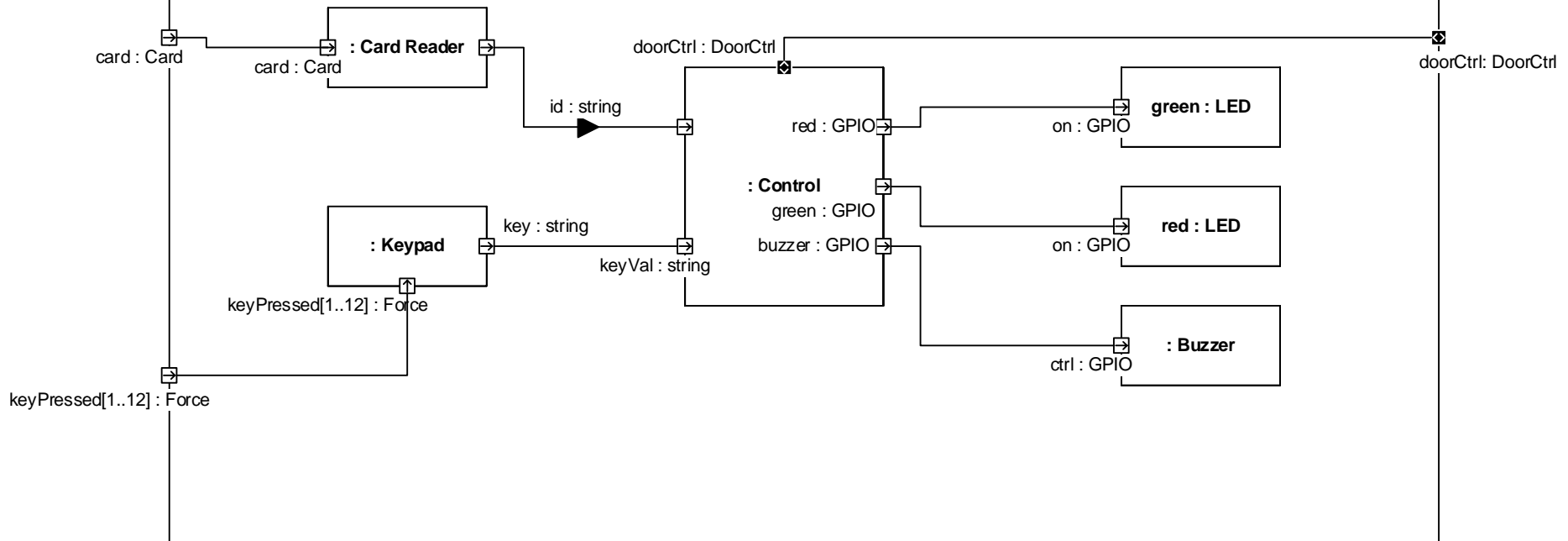


ibd System Context



ibd Access Control System

Observe how the conjugated flow port is repeated, when going to the outside!



Today's exercises

- The solutions to last lecture's exercises
 - BDD for Parkeringsautomat
 - BDD for Smart Fridge
- Can be found on Blackboard
- Use them as input to create IBD's for
 - The User Interface block for Parkeringsautomat
 - The complete Smart Fridge