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Specification of Communication Components in UML
➤ Application = set of **components** (functional concern) linked by **glueware coordination** (application specific part)
Inside the glueware: some interaction/coordination/communication means are reusable.
COMMUNICATION COMPONENT (MEDIUM)

➤ Component properties:
  ➤ Autonomous software element
  ➤ External interactions and contract clearly specified
  ➤ Replaceable and *reusable*

➤ Medium properties:
  ➤ A communication specialized component: implement an *any-level communication protocol* or service (consensus, vote, blackboard, event broadcast, message passing, . . .)
  ➤ “Classical” components communicate through mediums
➤ Application = set of components (functional concern) and mediums (communication concern) linked by glueware (more specific part of the application)
Why a specification?
- to describe the component contract from its user’s point of view
- List of its offered and required services
- Behavior of each of its services

How to specify?
- in UML
  - Medium described by a collaboration
  - Interaction messages, statecharts and OCL for the behavioral aspect
BASIC EXAMPLE: VIDEO BROADCAST

Communication Components
In the paper:

- The methodology of medium specification in UML
- Specification of a Linda coordination model based medium
CONCLUSION

➤ Communication service reified into a component:

➔ Abstraction for manipulating communication/coordination means from analysis and design to implementation

➔ Allowing reusability of communication means
PERSPECTIVES

➤ Two applications using two mediums (video broadcast and vote) about to be released

➤ A medium catalogue is being developed

➤ Integrating this UML methodology of specification in an UML CASE Tool (Umlaut) for code generation and medium validation
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➤ Informations on Communication Components:
   http://www-info.enst-bretagne.fr/medium/

➤ The UML Case Tool Umlaut is freely downloadable from:
   http://www.irisa.fr/pampa/UMLAUT/