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General requirements

- □ An information system consisting of subsystems communicating using messages.
- Each generated message should correspond to a normal interaction within the company:
 - A limited number of messages will be exchanged between the autonomous subsystems.
 - Reasonable performance requirements.
 - Quite obvious to identify what messages that should be exchanged.

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General requirements (cont.)

□ High communication independence:

• Each subsystem should be able to send a message at any time. Receiver state should have no influence. • Each subsystem should be able to be restarted at any time without affecting the message system. • The interface between subsystems and message handling system should be as transparent as possible. • The receiving subsystem should be able to read incoming messages how it finds it desirable. • Handling of messages should be done by the receiving subsystem • The message handling system should have no knowledge of the messages content. □ It is also desirable to make the information system able to work even when the message handling system does not. • Alternative solutions when the message handling system does not function. 18 (25) - DISTRIBUTED SYSTEMS Distributed Coordination-Based Systems - Sven Ame Andreasson - Computer Science and Engineering CHALMERS **Centralized solution** System 1 (Local network) System 2 (Local network) Computer 1 Computer 3 Application 1 Application 5 Application λ Application 6 Server 1 Server 2 inter network TA TA AA AA Computer 2 Application 3/ Application/4

TA: Transfer Agent

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AA: Application Agent

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- The supervision will be slightly more complicated than in a centralized system.
- Less efficient than a centralized system.

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TA: Transfer Agent

AA: Application Agent

Application 3

Application 4

TA

AA

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	Distributed solution	
	Advantages	
	• High communication independence.	
	• Application interfaces will be even more network independent.	
	• Application interfaces will be even less complicated.	
	Disadvantages	
	• Much harder message passing system administration.	
	• Difficult supervision.	
	• Much less efficiency.	
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