



The DHE in H:S

IT-consultant, M.Sc.(Eng.), MD Frederik Endsleff,
Copenhagen Hospital Corporation,
H:S

The outset, historically

- Mainframe og terminalbased HIS without standard interfaces to other systems (GS)
- Laboratory Informations Systems (Biochemistry, Microbiology, Pathology, Bloodbank), Management Information, Payroll etc.
- Quite well delimited systems
- Isolated by well functioning IT islands

The general situation of today

- More clinical systems emerging
- Many systems
- Still more overlap
- Focus on clinical databases
- Focus on the EHCR
- Increasing system complexity
- **The need for system integration and system coherence central**

The H:S/KAS Integration Design Contest



H:S and KAS are the two public hospital organisations in the Copenhagen area



Key figures:

- 1.2 million inhabitants
 - 23% of the Danish population
- 9 hospitals
- 6709 beds in total

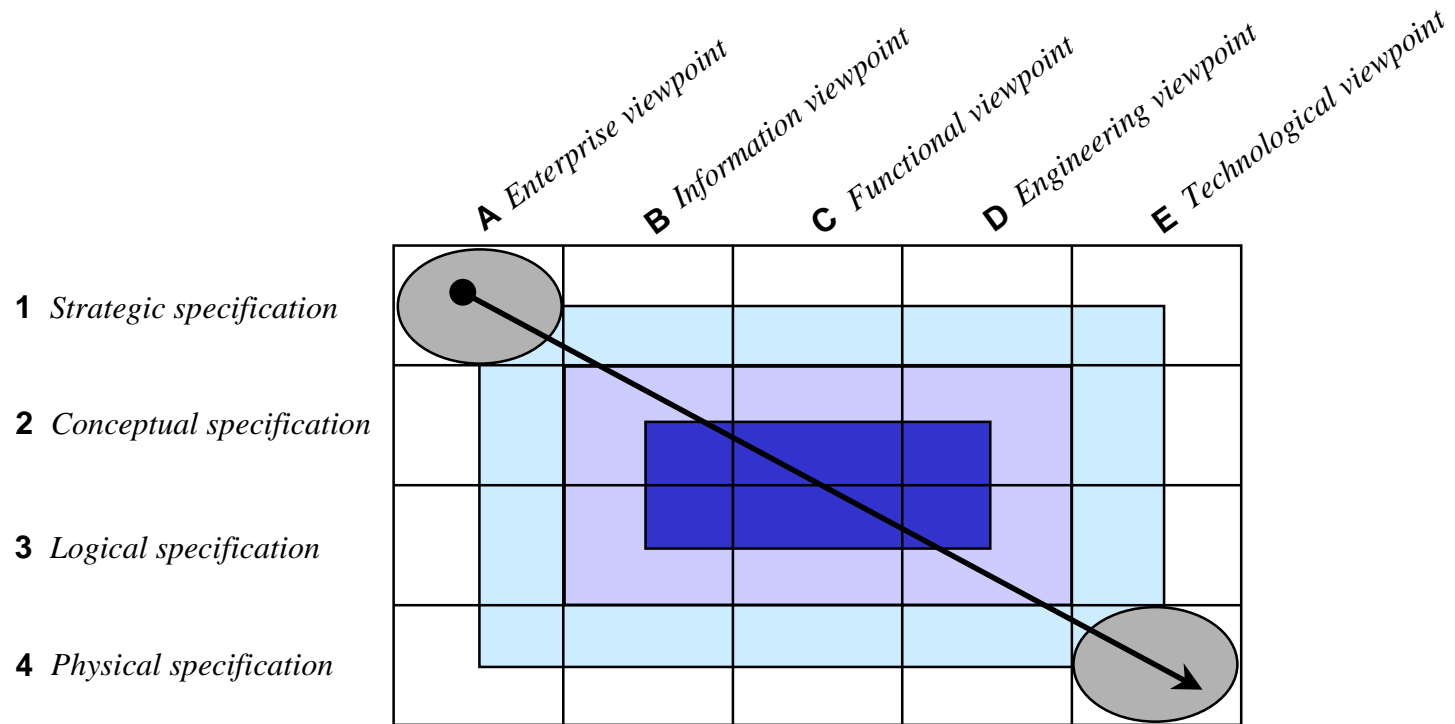


The H:S/KAS Integration Design Contest

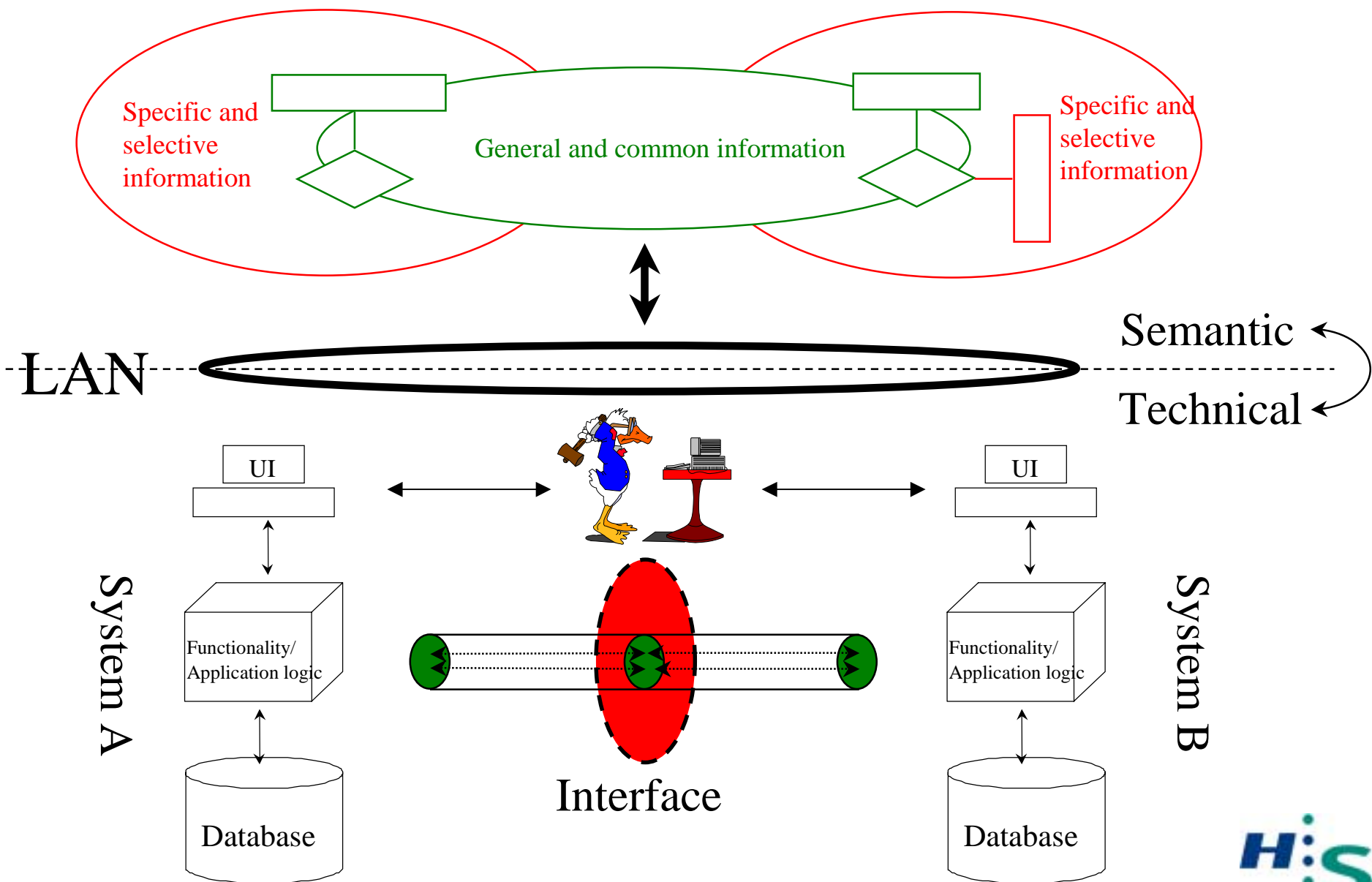
- mid 1999 to spring 2000 -

- Letting the vendors deliver proposals
- Focus on the level of dataintegration
- Contest program by H:S/KAS
 - *Requirement specification for the contest proposals*

Structural requirements for the contest proposals

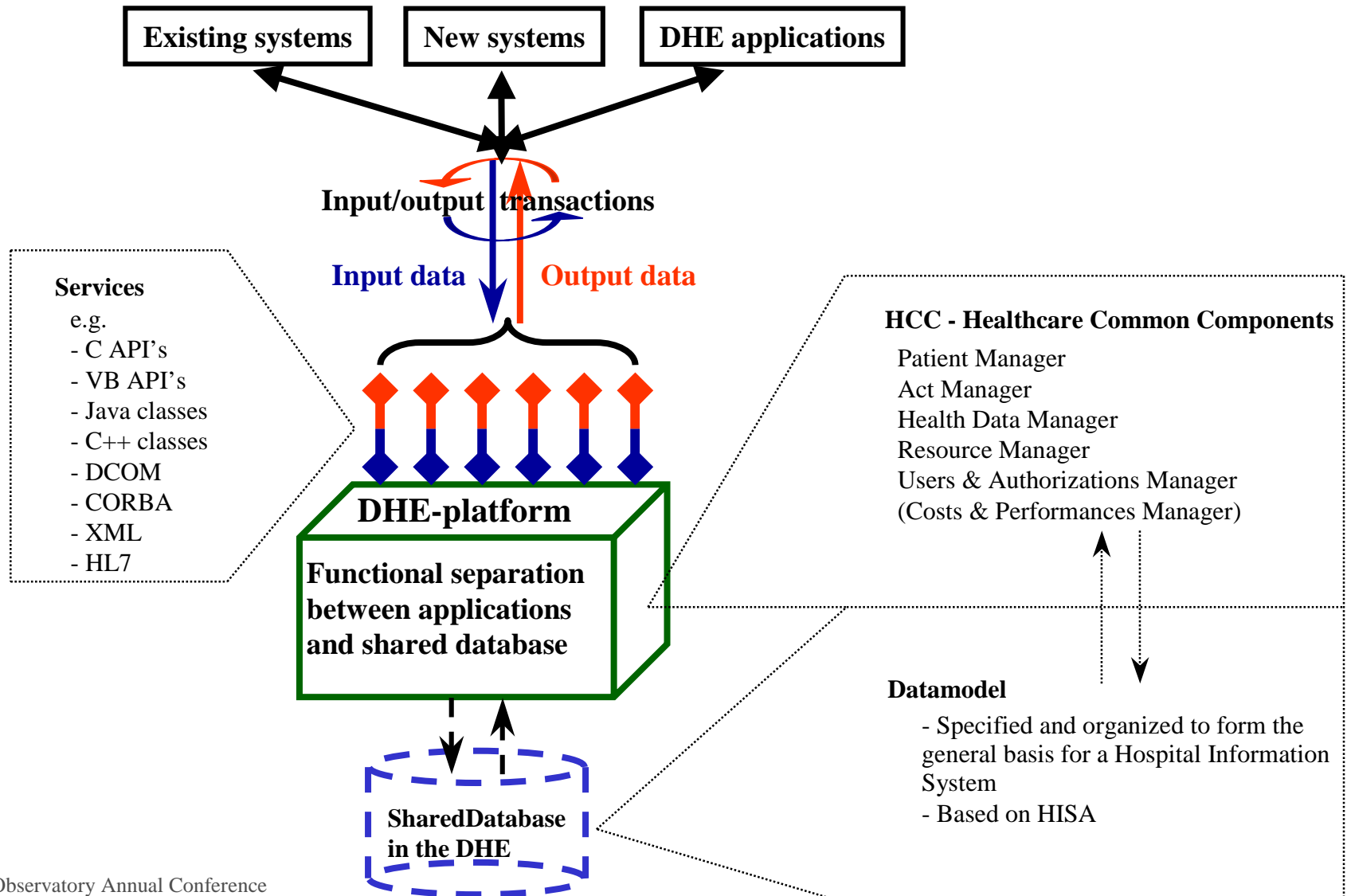


Requirements regarding content and level of detail



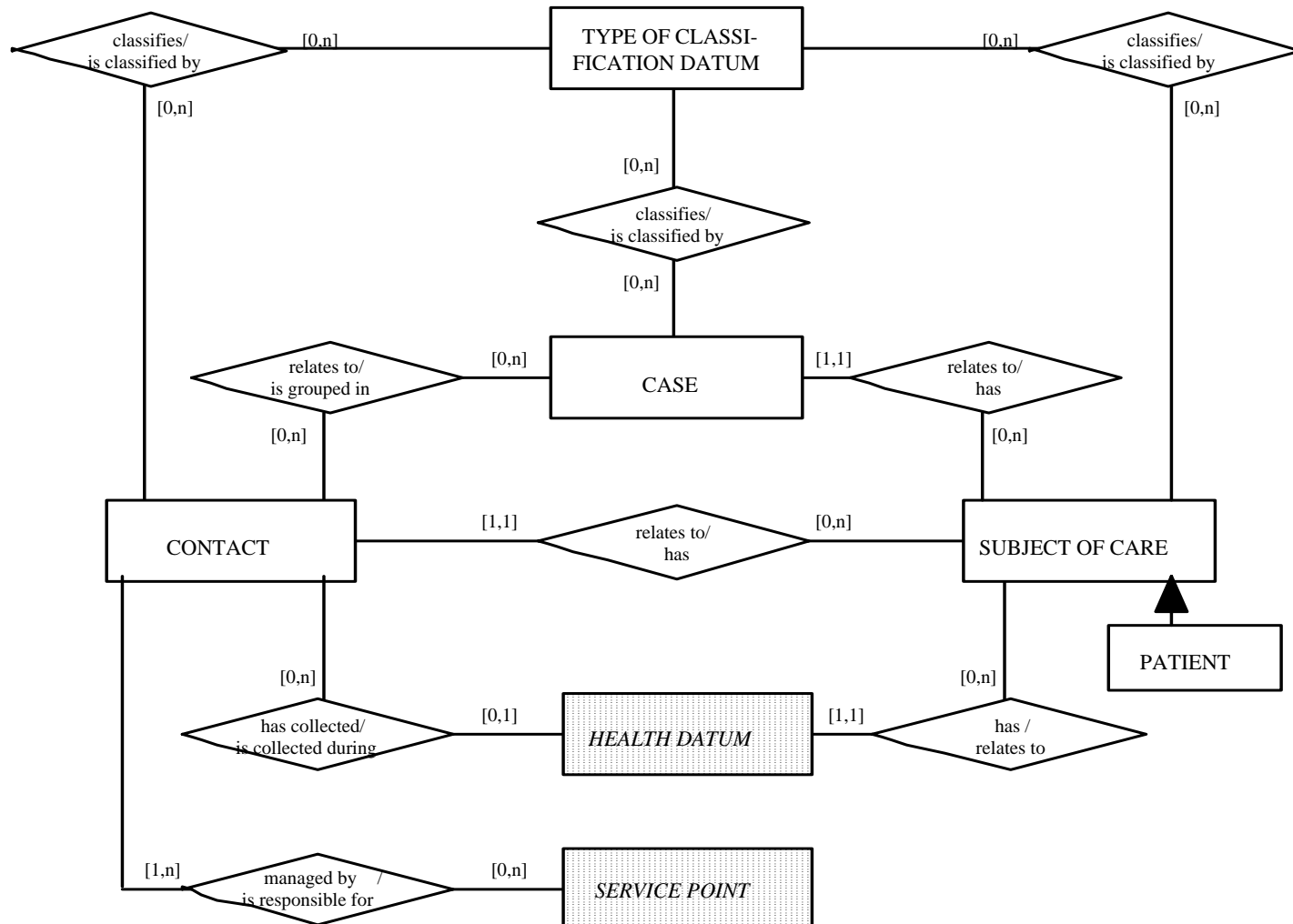
Integration based on DHE/HISA

- *the winning proposal*

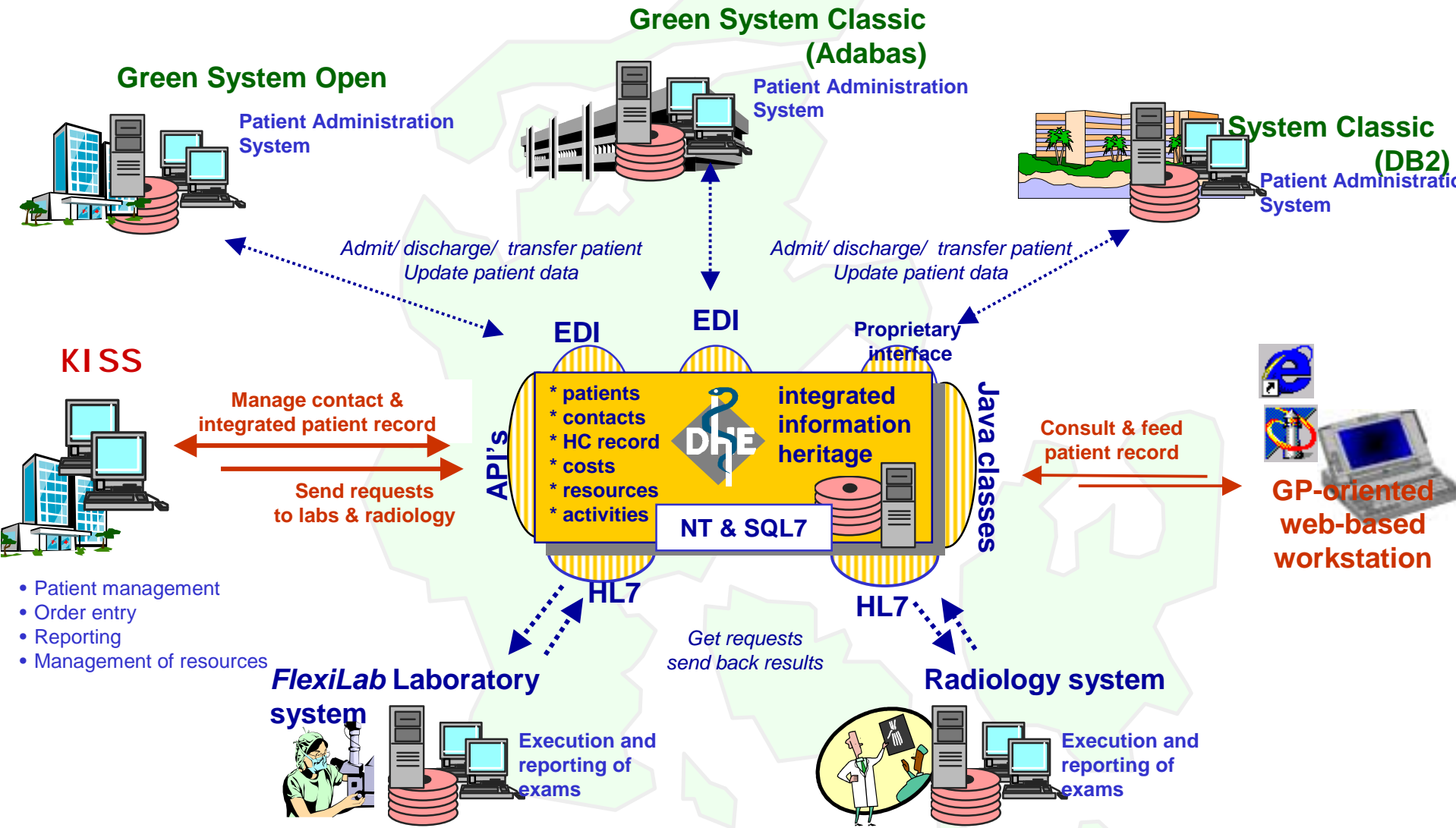


HISA

- Subject of care HCS



The architecture





Healthcare Information System Architecture (HISA)

- CEN ENV 12967

CEN prestandard 15 March 1997

- Topdown approach
- Minimum model
 - specifying datamodel
 - specifying 'services'



HISA

- the principal core

- Entities
- Relationships
- Open interfaces, public API's, for all the common data of the HISA conformant system

HISA



- the revision

Background for the revision of HISA:

- Used successfully by customers and vendors
- Need for update to full EN, according to CEN procedure
- Need for standard alignment regarding form and content

Objective for the revision of HISA:

- Keep the essence and backwards compatibility of the present ENV
- Update and align regarding form, notation and syntax etc.
- Align with the other CEN EN's under way (EHCR)
- Clarify the essential scope and rationale of HISA
- Turn HISA into a full EN, in line with the other emerging CEN EN's (such as EHCR)



HISA

- the revision

Revision outline:

- Focus on the service aspect of HISA
 - Health Informatics Service Architecture (ENV 12967)
- Division into three parts, according to ISO ODP 10746
 - Enterprise Viewpoint (ENV 12967-1)
 - Information Viewpoint (ENV 12967-2)
 - Computational Viewpoint (ENV 12967-3)

HISA



- examples on requirements referring to HISA
- H:S Integration Platform tender spring 2002

Compliance with the HISA pre-standard

The integration platform and database must be in full compliance with the EU's HISA pre-standard.

System services

The integration platform must, as specified in HISA, offer basic system services in a number of areas for reading, writing and manipulating shared data. Such system services must be capable of handling the underlying data model in its entirety so that manipulation of all data is performed via services. It is important that system services are open for a wide range of technologies to ensure that development on the platform can take place in a flexible and attractive manner.

HISA



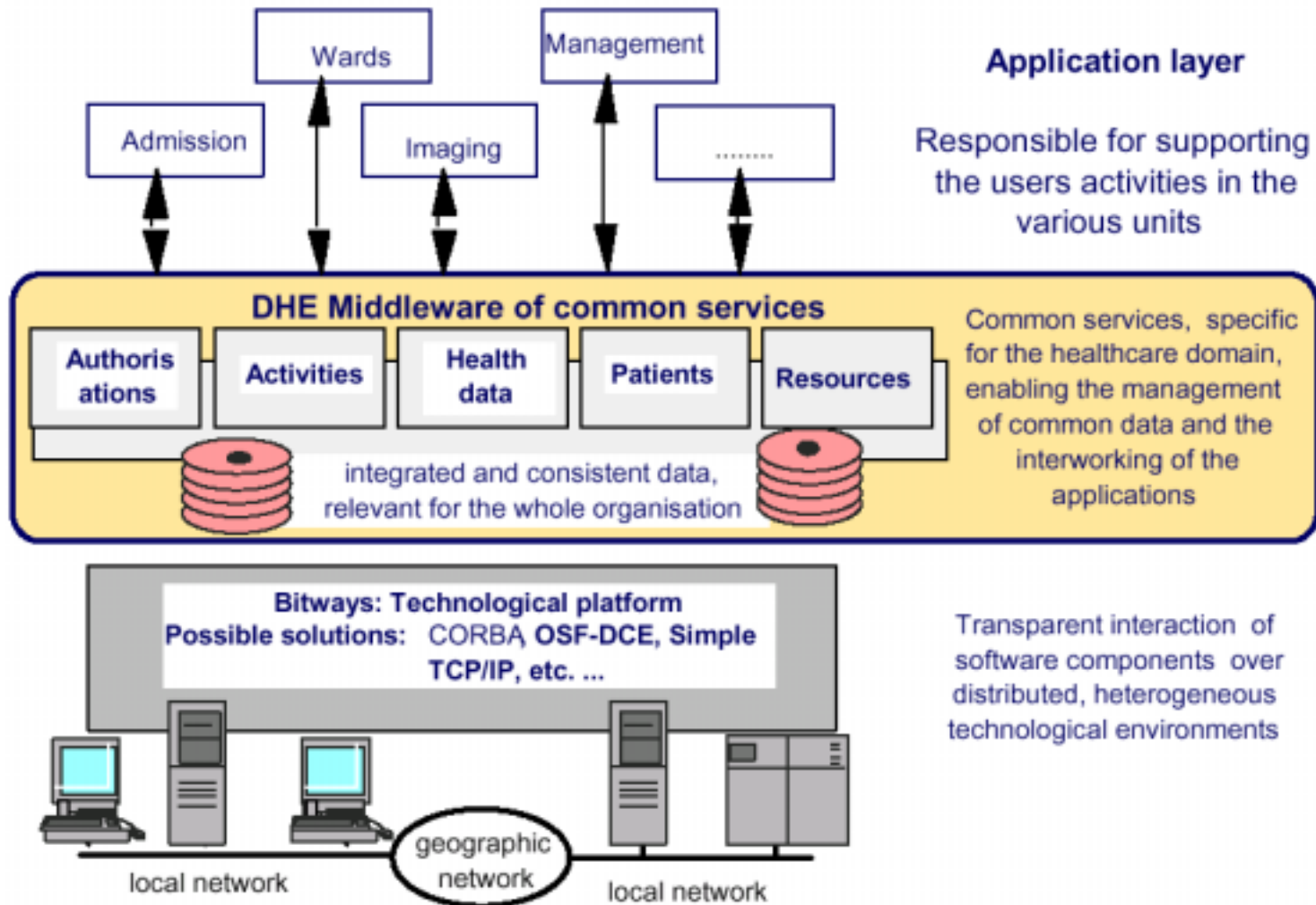
- examples on requirements referring to HISA
- H:S Integration Platform tender spring 2002

Data model

The data model must be a reasonably complete, validated and proven model complying with current Danish standards (including those of the Danish National Board of Health). Further, in so far as possible, it should be compatible with the domain of the Danish National Board of Health not least in regard to the in December 2001 released “basic structure for electronic patient records”, G-EPJ v. 1.0.

The DHE

- a system/platform model

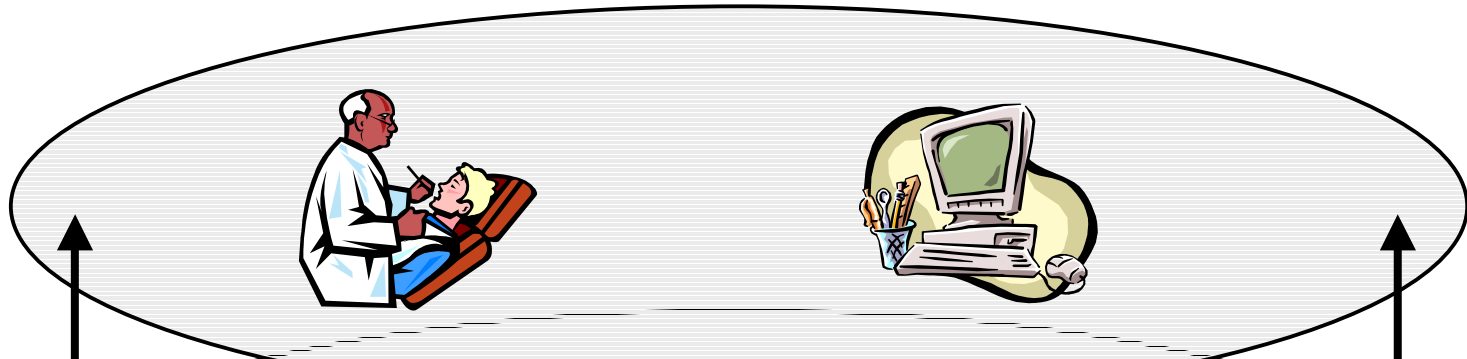


The DHE

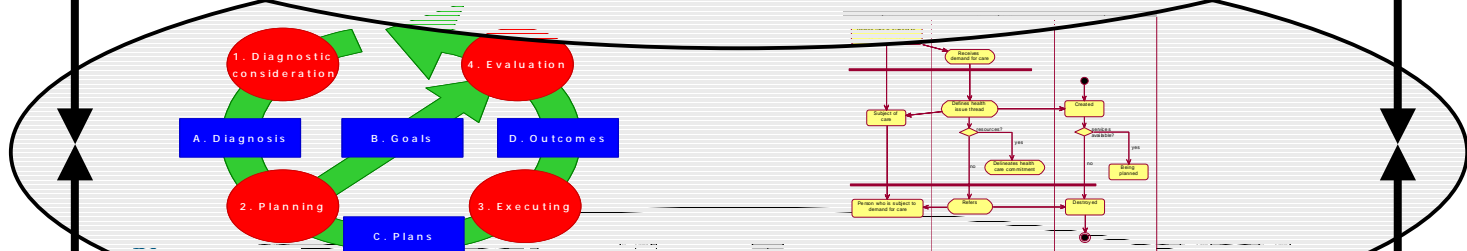
- a system/platform model



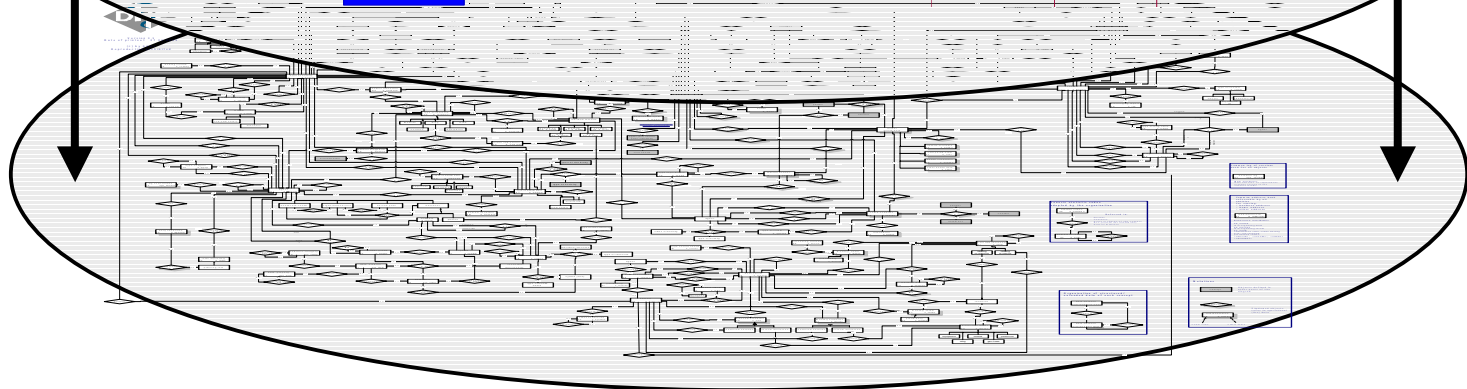
Clinical
Workstation



Business
Process
Model

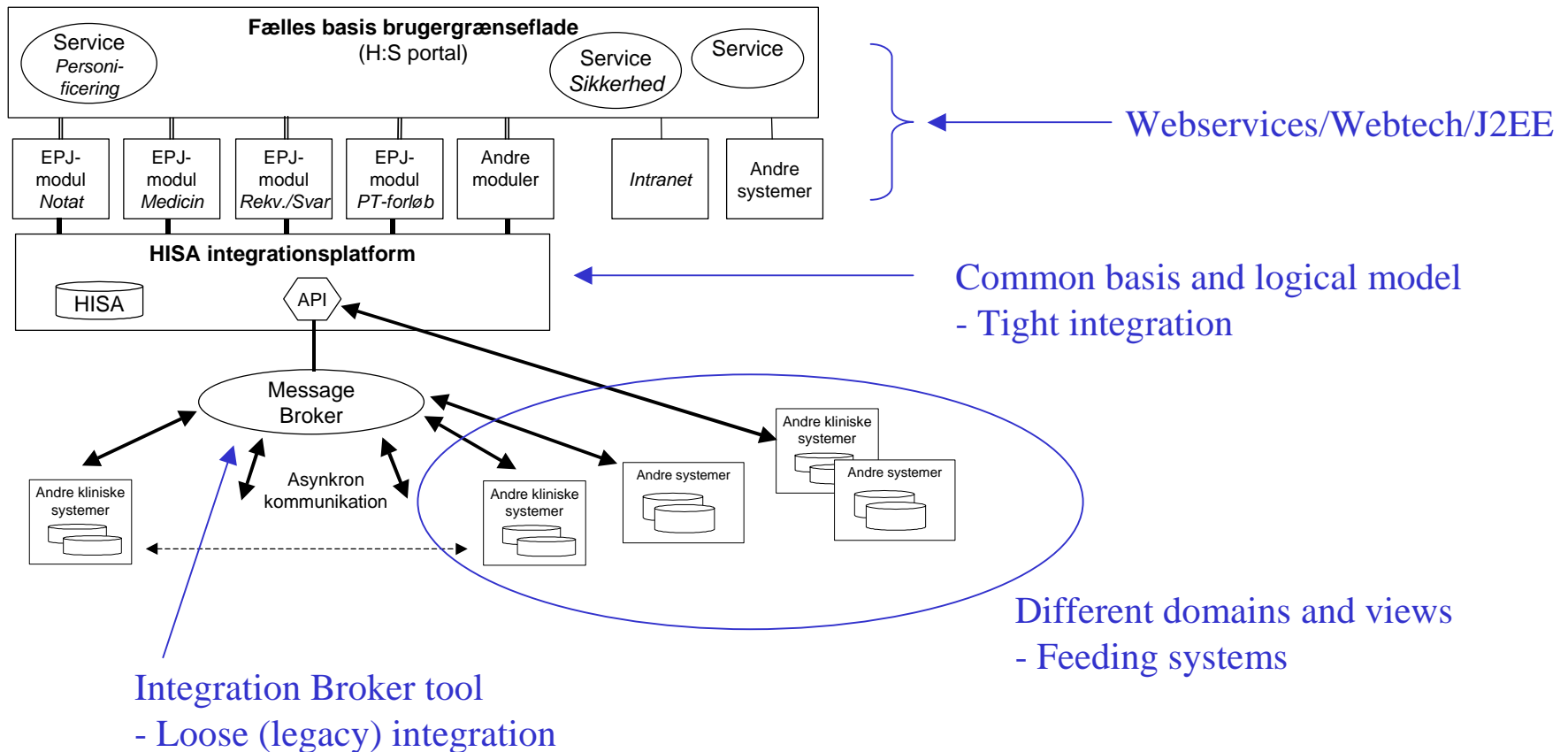


DHE
Datamodel
Repository



H:S strategy

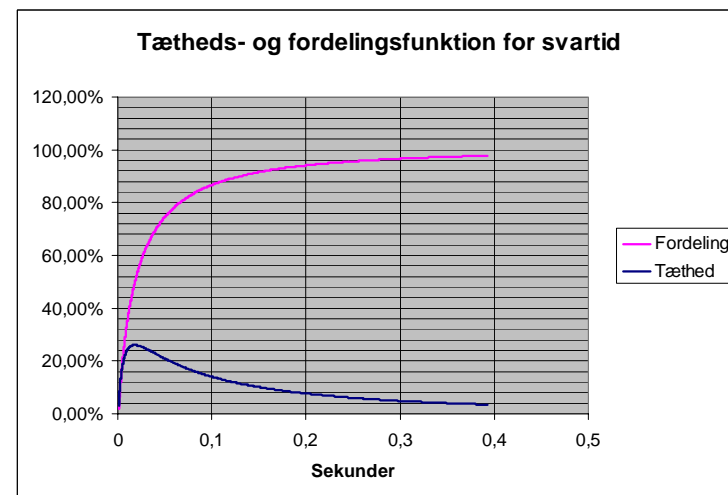
- With the DHE as the HISA Integration Platform



The DHE and the EHCR development in H:S



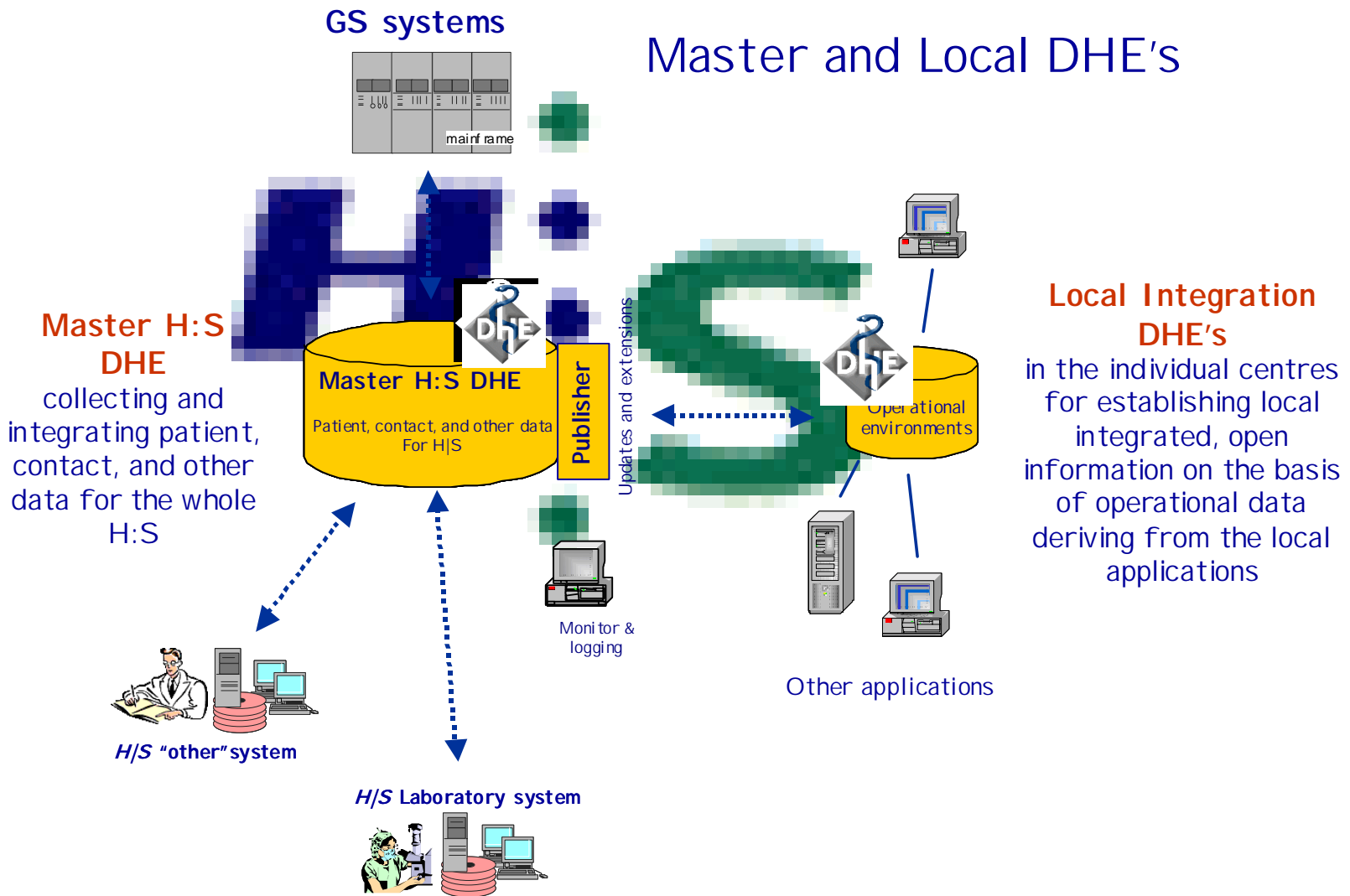
- 1999/2000 The DHE chosen as a **HISA based** dataholding Integration-platform through the design contest (need for further tender)
- - 2002 The DHE adopted and implemented in H:S, as a platform for both integration and application development through the last 1½ year
- - 2002 Multivendor environment established regarding the DHE
- - 2002 H:S strategy encompassing the DHE and componentbased-/modular EHCR's in the application domain
- 2002 Tender for a HISA based dataholding Integrationplatform completed.
- 2002 Contractual delivery of the DHE following exact time-schedule, including installation, takeover and operational tests



DHE related projects underway



- Master Patient DHE





DHE related projects underway

Electronic Patient Medication Module (EPM)

- Tender

- Requirements specification
 - Generic requirements stated regarding a HISA compatible dataholding platform
 - The requirements specification states priority regarding the ability to use the HISA platform directly as the datastore, and the eventual implementation hereof by the EPM module
 - Documentation on the DHE, as the chosen HISA platform in H:S, made available for the vendors
- Deadlines
 - 26 August was the deadline for the receipt of bids
 - Decision soon to be made