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SDOs' Activities in the Context of Telepathology and the Framework of Standardization

Bernd Blobel, PhD, Associate Professor

eHealth Competence Center Regensburg, Germany

Head, eHealth Competence Center
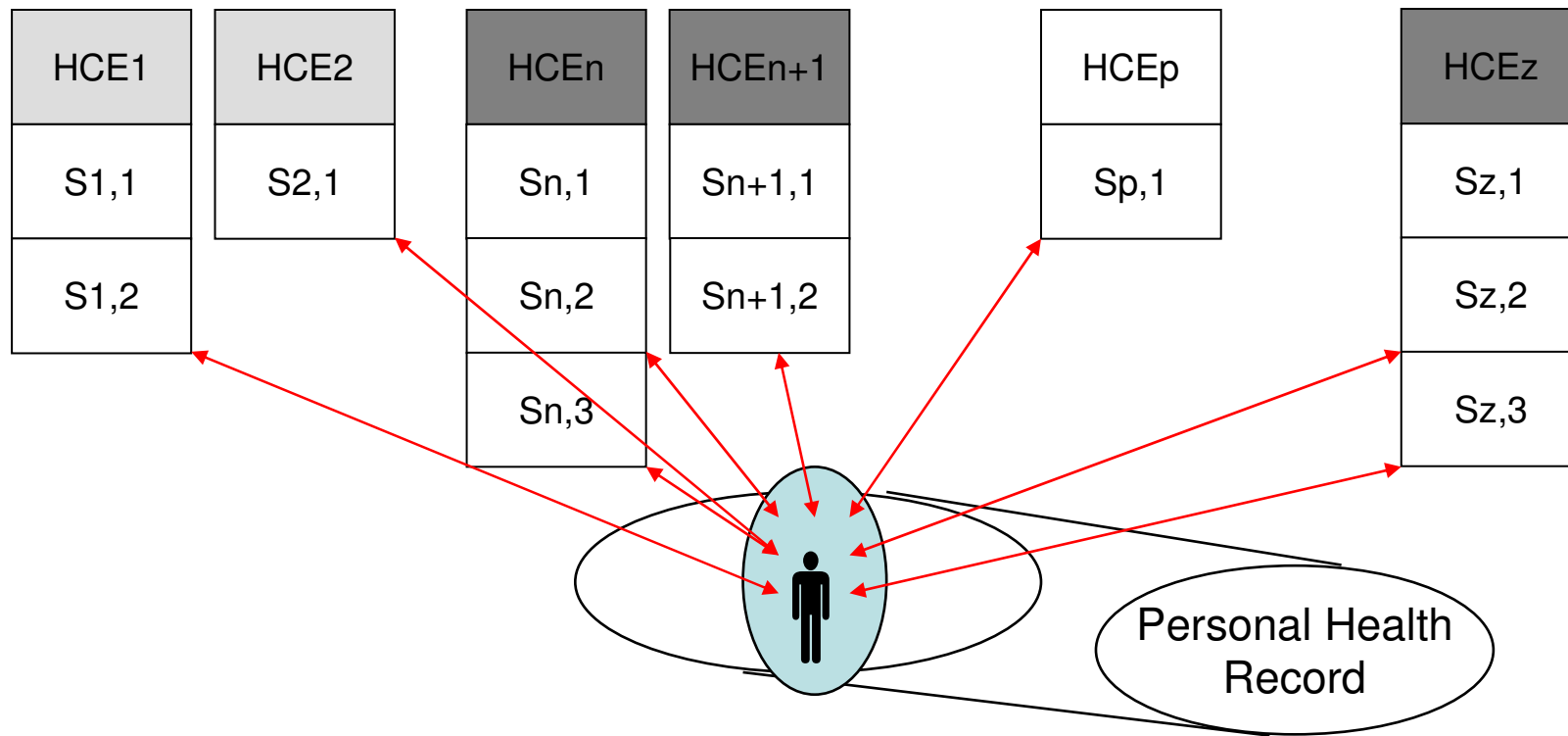Chair Elect, HL7
Chair CEN/ISSS eHealth Standardization Focus Group

Chair EFMI WGs "Electronic Health Records" and "Security, Safety and Ethics"

Vice-Chair od the German Health Informatics Standards Committee
Deputy Head of German Delegation to ISO and CEN

Personal Health Paradigm

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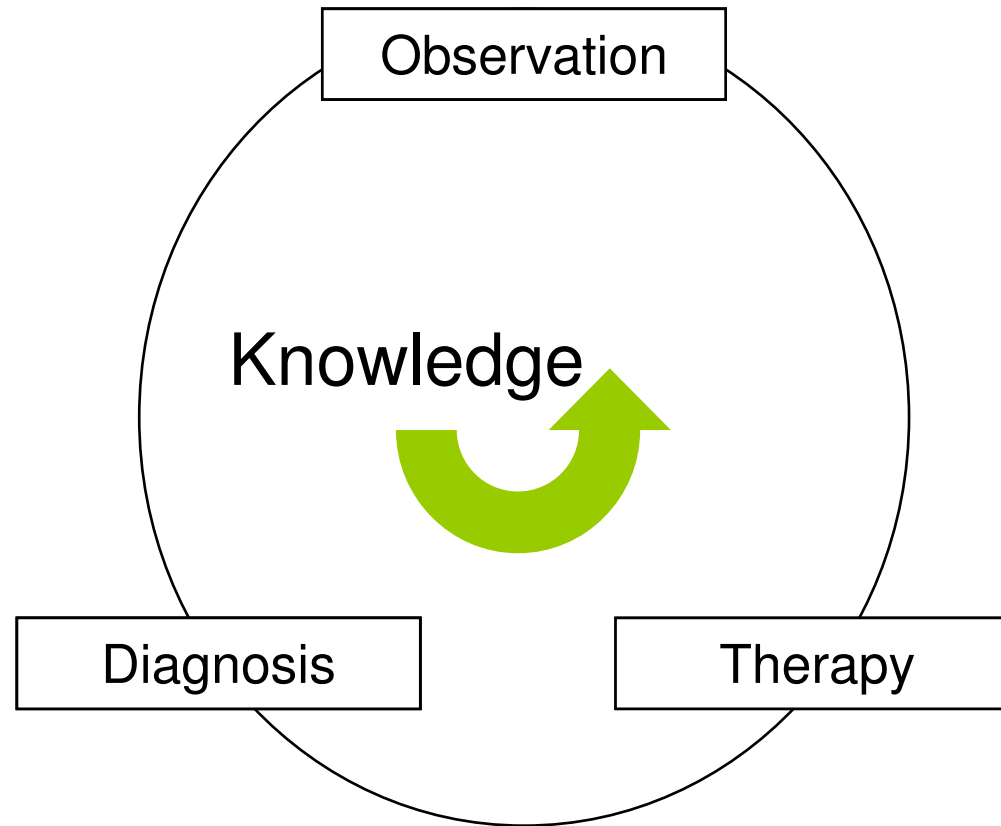
Interoperability Levels

Interoperability Level	Instances
Technical interoperability	Technical plug&play, signal- & protocol compatibility
Structural interoperability	Simple EDI, envelopes
Syntactic interoperability	Messages, clinical documents, agreed vocabulary
Semantic interoperability	Advanced messaging, common information models and terminology
Organizations/Service interoperability	Common business process

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Project Meeting, 2-3 October 2008, Évora, PT

Requirements for Achieving Interoperability and Harmonisation

- Openness, scalability, flexibility, portability

- Distribution at Internet level

- Standard conformance

- Service-oriented semantic interoperability

- Consideration of timing aspects of data and information exchanged

- Lawfulness

- User acceptance

- Appropriate security and privacy services

Model-Driven Architecture

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Model

A model is a partial representation of reality. It is restricted to attributes the modeller is interested in. Defining the pragmatic aspect of a model, the interest is depending on the addressed audience, the reason and the purpose of modelling the reality and using the resulting model for a certain purpose and for a certain time instead of the original. Therefore, the model as a result of an interpretation must be interpreted itself.

See for the following slides, e.g., Blobel B (2006) Concept Representation in Health Informatics for Enabling Intelligent Architectures. In: Hasman A, Haux R, van der Lei J, De Clercq E, Roger-France F (Edrs.): Ubiquity: Technology for Better Health in Aging Societies, pp. 285-291. Series Studies in Health Technology and Informatics, Vol. 124. IOS Press, Amsterdam.

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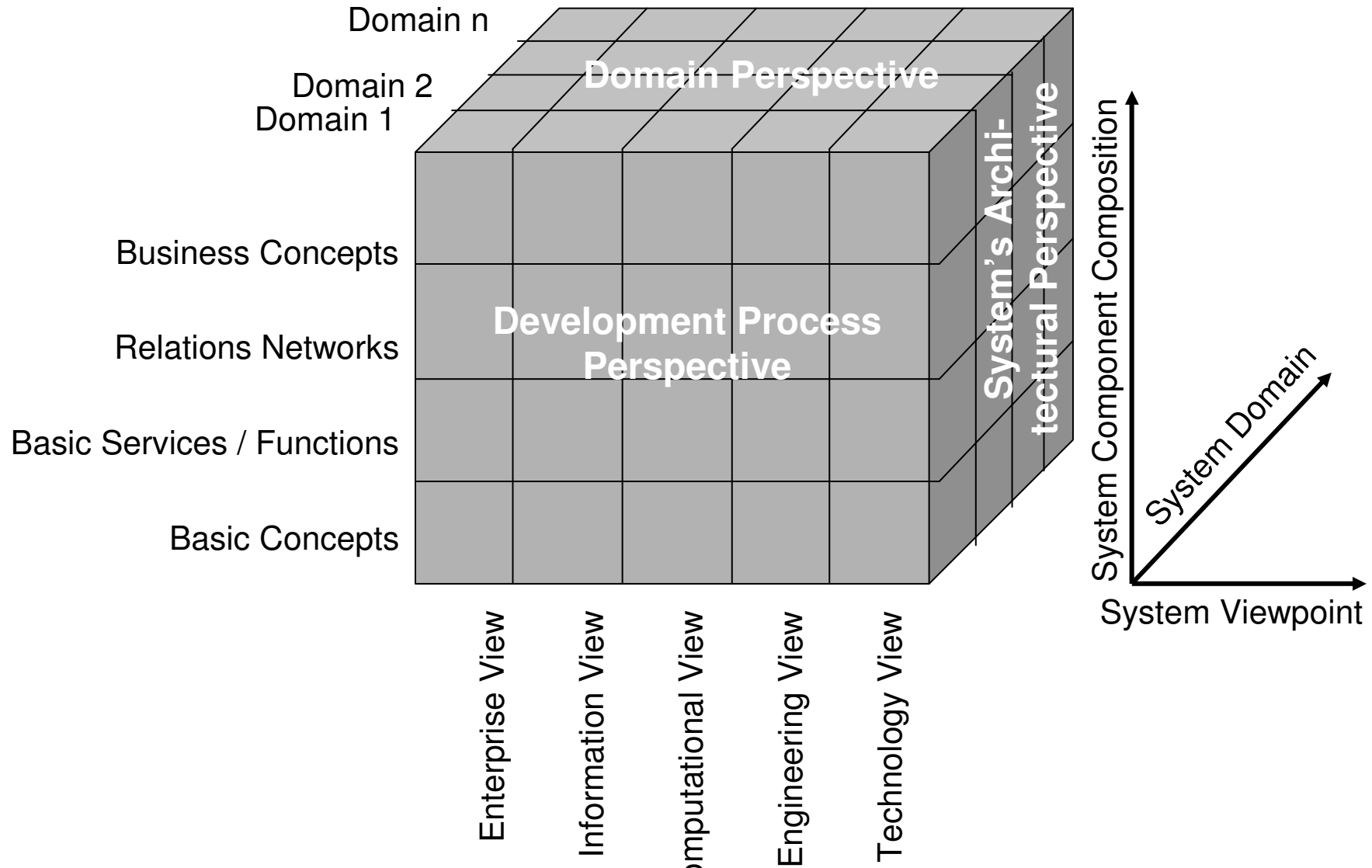Project Meeting, 2-3 October 2008, Évora, PT

Knowledge

A purpose of models is to create knowledge. An outcome of developing mathematical models is that it helps model builders and decision makers understand the relationships between important variables in a business situation. On the other hand, description and especially the interpretation of real systems are based on knowledge.

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Concept

A concept is a formal model. It shall be uniquely identifiable, accepted by experts and users, as well as independent. A concept as a knowledge component can be specialized and generalized as components can.
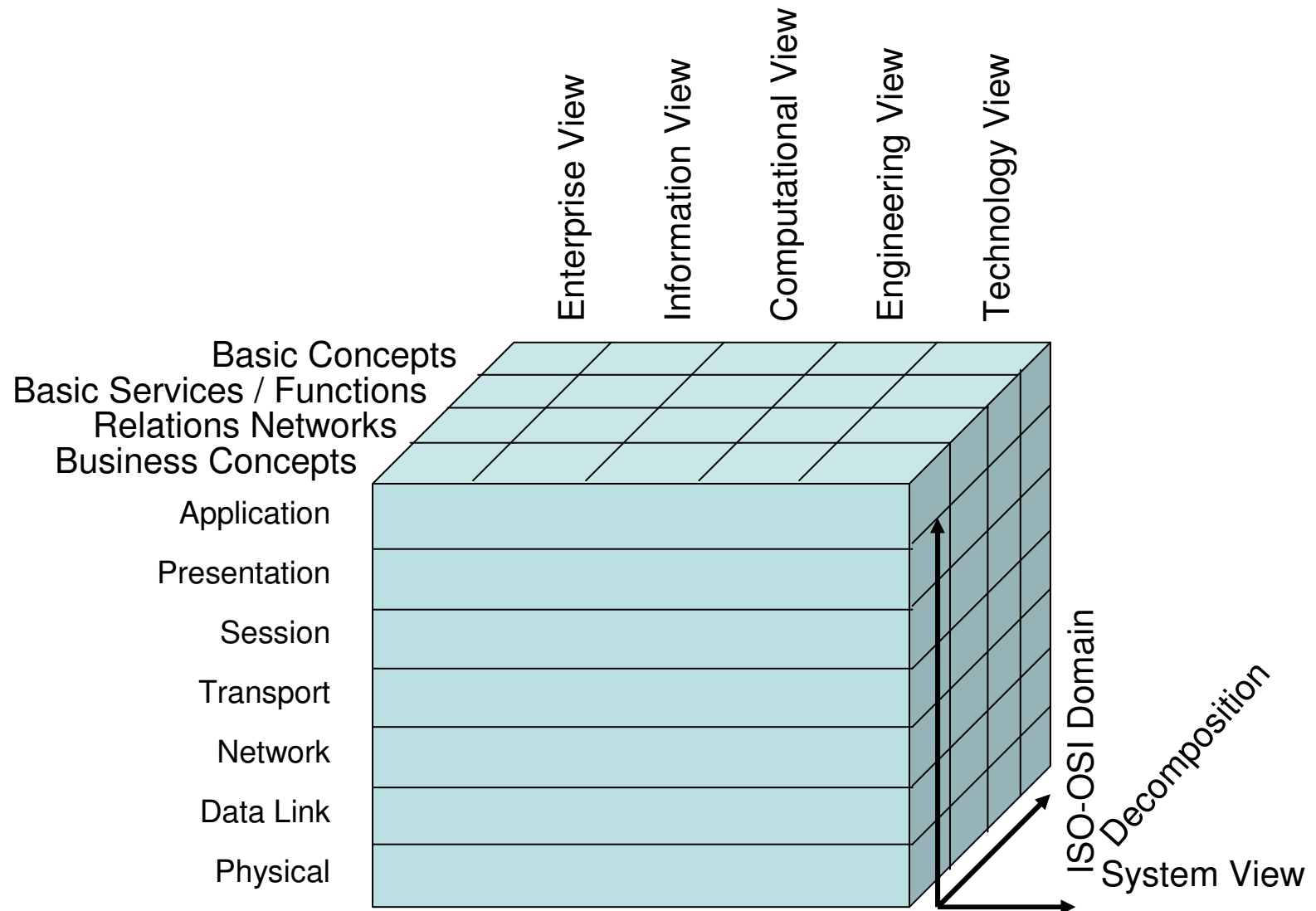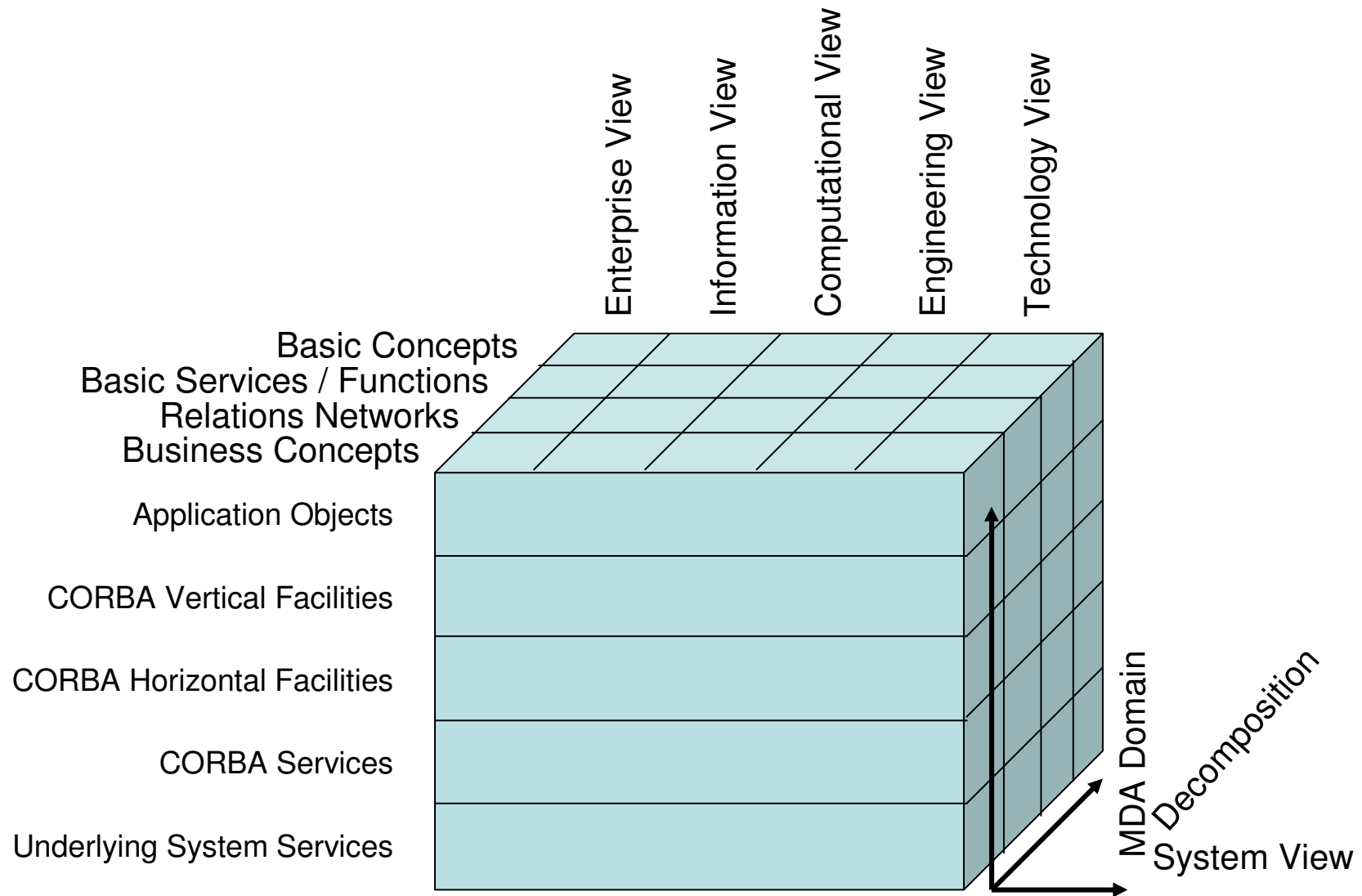
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Generic Component Model (GCM)

Domain n

Domain 2
Domain 1

Domain Perspective

Business Concepts

Development Process Perspective

Relations Networks

System's Archi-tectural Perspective

Basic Services / Functions

Basic Concepts

System Component Composition

System Domain

System Viewpoint

Enterprise View

Information View

Computational View

Engineering View

Technology View

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Architecture Paradigms for Future-Proof Health Information Systems

Paradigm	Supported Characteristics
Distribution	Interoperability
Component-orientation	Flexibility, scalability
Model-driven, service-oriented design, considering concepts, context and knowledge	User acceptance, lawfulness
Comprehensive business modeling	User acceptance, lawfulness
Separation of platform-independent and platform-specific modeling (separation of logical and technological view)	Portability
Specification of reference and domain models at meta-level	Semantic interoperability
agreed reference terminologies and ontologies	Semantic interoperability
Unified development process	Semantic interoperability
Performance, User friendliness	Nutzerakzeptanz
Embedding services in the architecture (including advanced security and privacy services)	User acceptance, lawfulness

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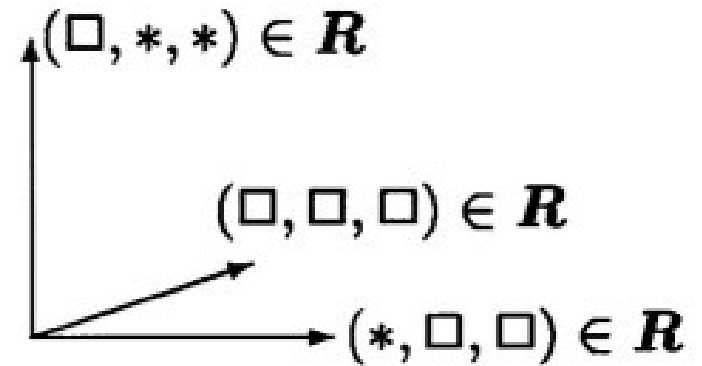eHealth Competence Center
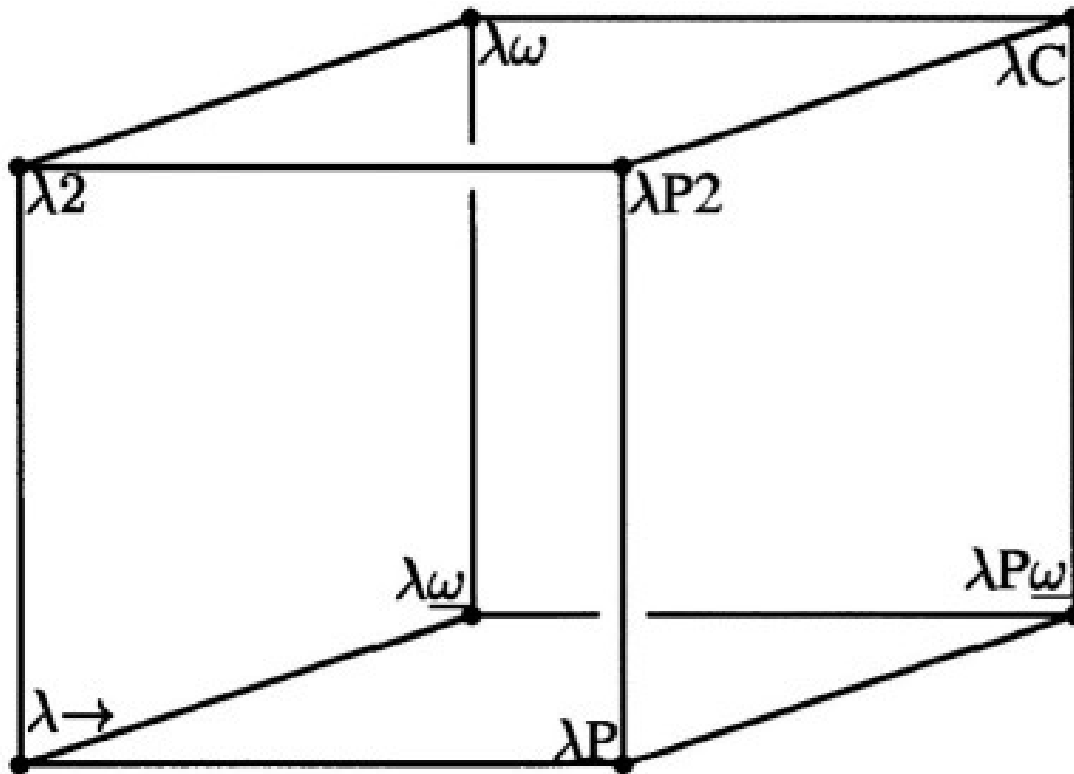University Hospital Regensburg

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SDOs' Activities in the Context of Telepathology and the Framework of Standardization

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λC

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$\lambda\omega$

$\lambda P\underline{\omega}$

$(\square, \square, \square) \in \boldsymbol{R}$

$\lambda \rightarrow$

λP

$(*, \square, \square) \in \boldsymbol{R}$

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Thank you for your attention!

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For more information

Blobel B, Pharow P, Nerlich M (Edrs.): eHealth: Combining Health Telematics, Telemedicine, Biomedical Engineering and Bioinformatics to the Edge - Global Experts Summit Textbook. Series "Studies in Health Technology and Informatics", Vol. 134. IOS Press, Amsterdam, Berlin, New York, Tokyo 2008.

http://www.cehr.de

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