MoCC 2008
2nd Artist Workshop on
Models of Computation and Communication

Workshop Theme

Model-driven Embedded System Design

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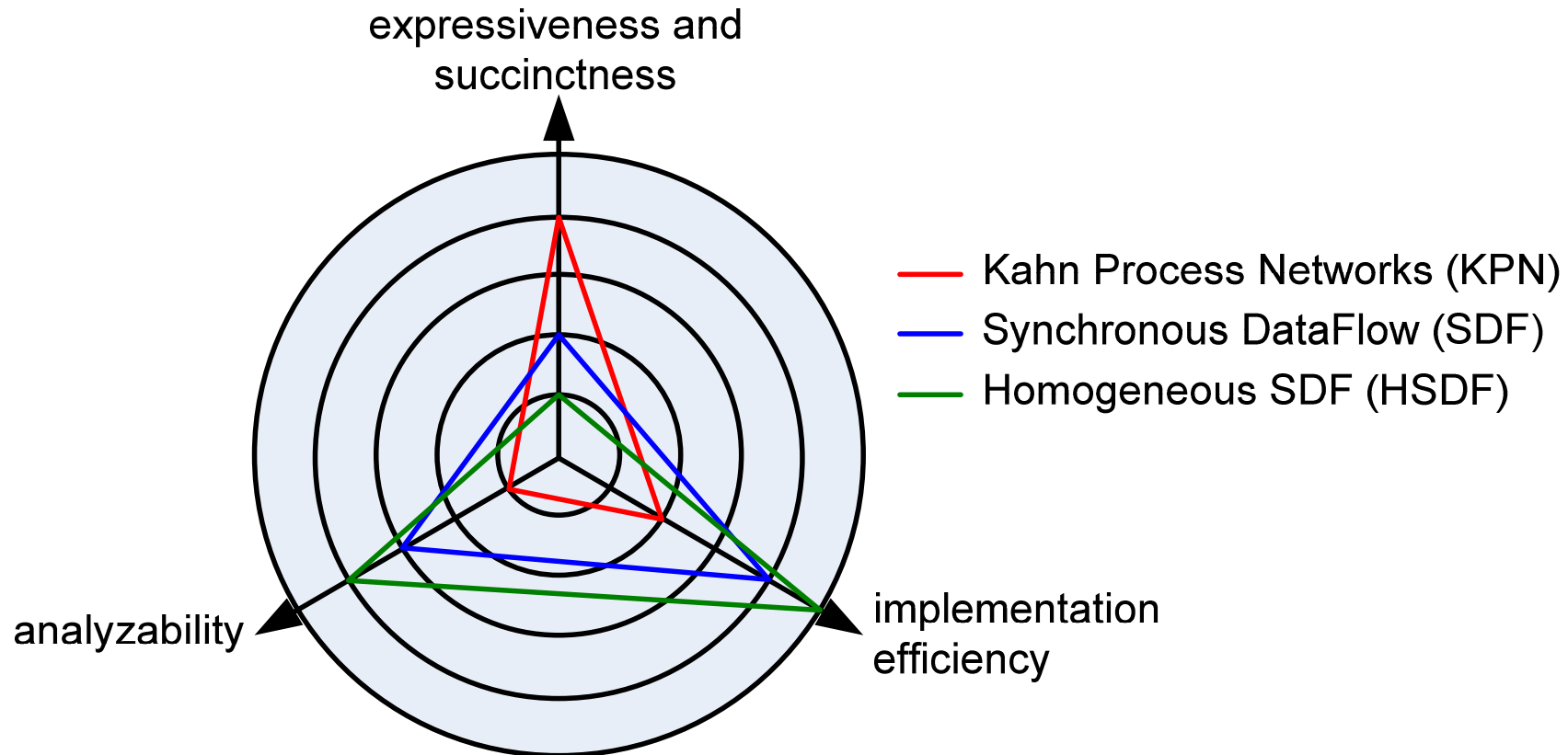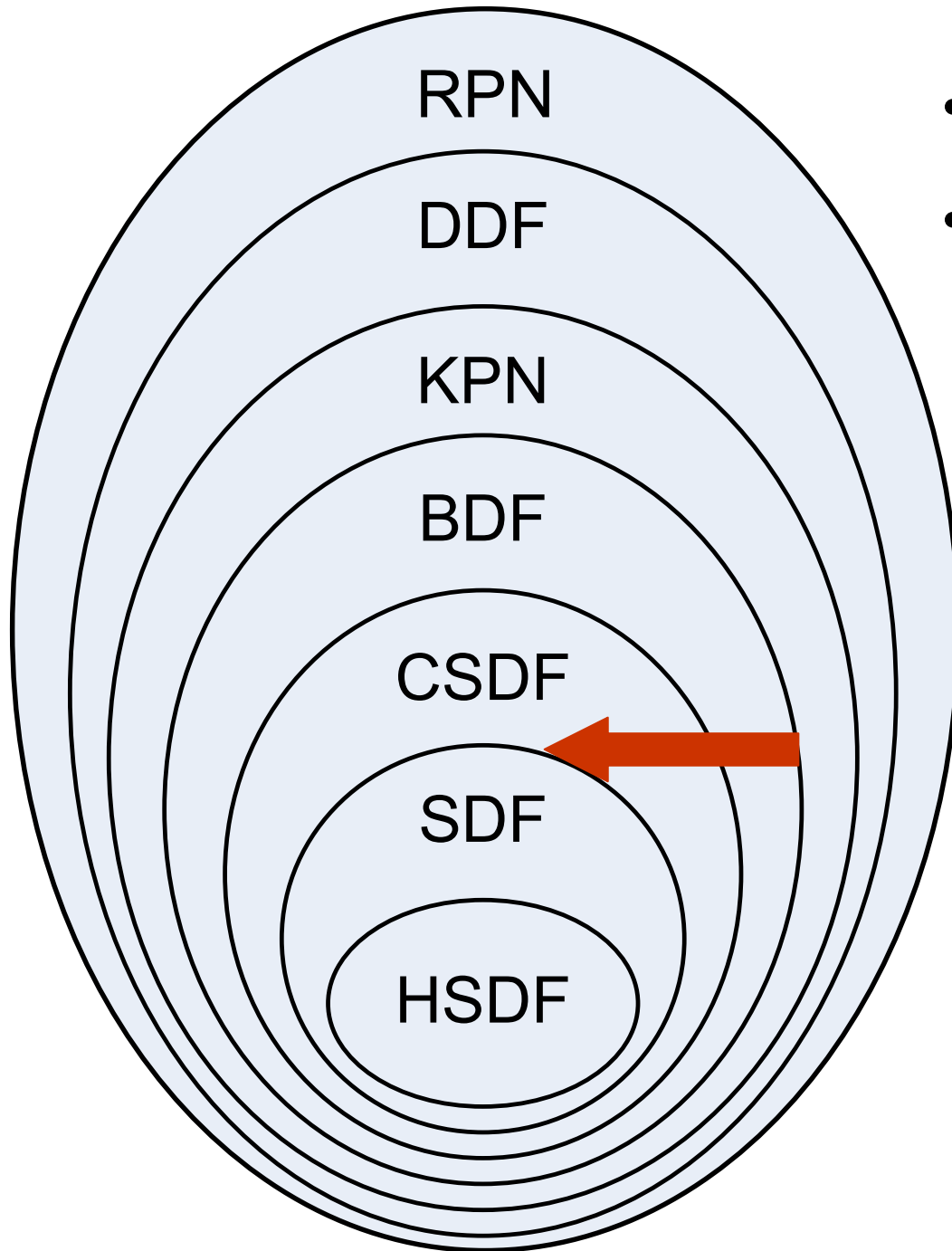TU/e Technische Universiteit **Eindhoven** University of Technology

artist

'An understanding of the natural world and what's in it
is a source of not only a great curiosity but great fulfillment.'

David Attenborough

predictability and efficiency

… are contradictory

Kahn Process Networks (KPN)
Synchronous DataFlow (SDF)
Homogeneous SDF (HSDF)

RPN

DDF

KPN

BDF

CSDF

SDF

HSDF

- BDF and larger: Turing complete

- Better notions of expressiveness needed

RPN: Reactive Process Networks

KPN: Kahn Process Networks

DF: DataFlow

DDF: Dynamic DF

BDF: Boolean DF

CSDF: Cyclo-Static

SDF: Synchronous DF

HSDF: Homogeneous SDF

Challenges

- Suitable notions of expressivity

- Unification of MoCs

- Expressivity while maintaining analyzability and synthesizability

- Abstraction without loosing accuracy

- MoCs for non-functional aspects

- Composability and compositionality

- Multi-objective trade-off analysis

- Parametric analysis

- Model-driven design and synthesis flows

- Model-driven run-time systems