The HSG guideline document

for modelling integrated urban wastewater systems

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11th ICUD
Edinburgh

04 09 2008

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Our motivation

Provide a guideline document to support the application and further development of integrated models for the assessment of IUWS in research and practice

Who are we?

- HSGsim
  - Dealing with integrated and WWTP modelling
  - Central European (mostly German speaking) working group
  - Members from Germany, Austria, Switzerland, Luxembourg, Poland, Netherlands, Slovakia
  - PhD-student and post-doc level
  - Independent from organizations
  - Self-organized
  - Open

The guideline document

- State-of-the-art
- Stepwise approach for integrated modelling according to the HSG guideline
- Case studies
- Further literature

The guideline document

- State-of-the-art
  - Regulations / guidelines
  - Water-quality oriented objectives
  - Processes and modelling approaches
  - Model interfaces / coupling techniques
  - Integrated modelling frameworks / software

The guideline document

- State-of-the-art
- Stepwise approach for integrated modelling according to the HSG guideline
  - System analysis
  - Processes and criteria
  - Modelling approaches and data
  - Analysis of model and data
  - Model calibration and validation
  - Model application for scenario analysis

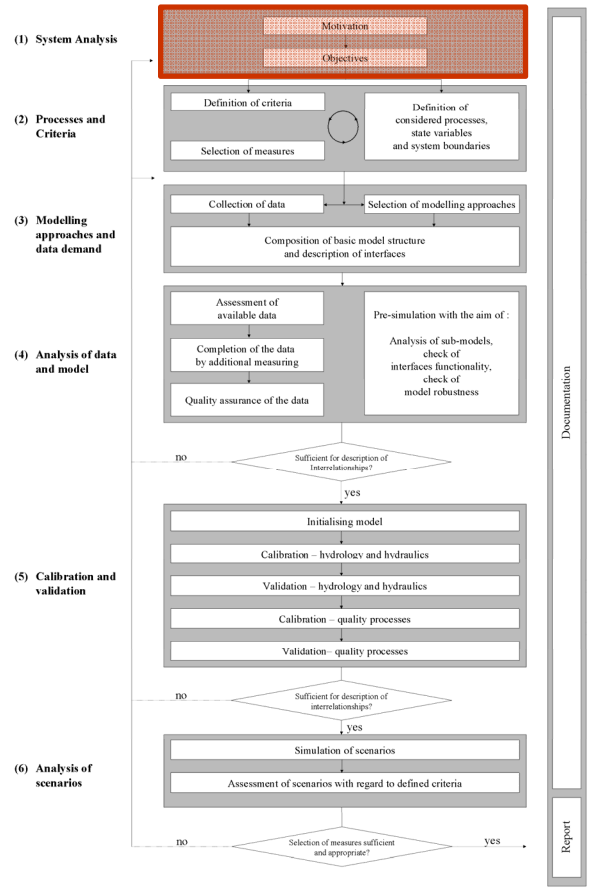
The guideline document

- State-of-the-art
- Stepwise approach for integrated modelling according to the HSG guideline
- Case studies
- Further literature

The HSG-procedure

for a systematic setup of integrated models

- System analysis
  - Motivation
  - Objectives



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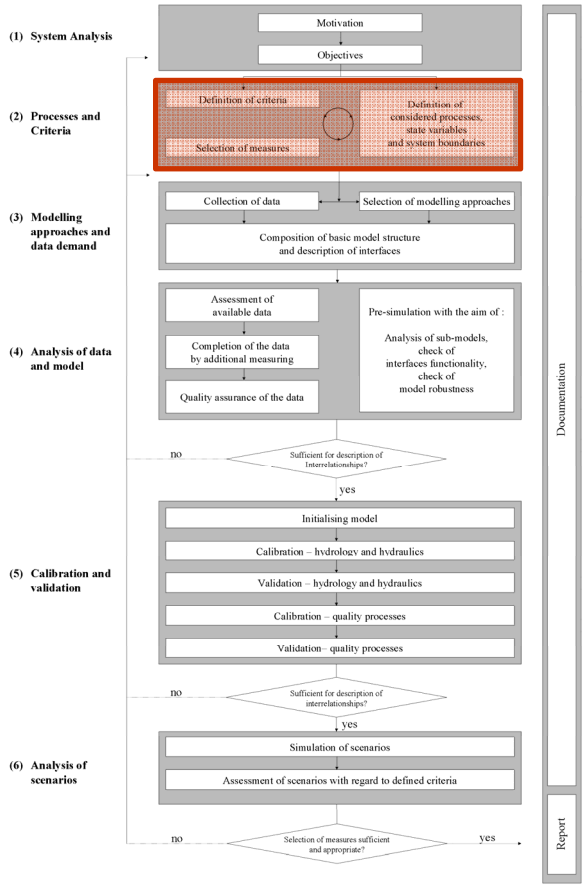
The HSG-procedure

for a systematic setup of integrated models

- Processes and criteria
  - Definition of criteria
  - Selection of measures
  - Definition of
    - Considered processes
    - State variables
    - Boundary conditions



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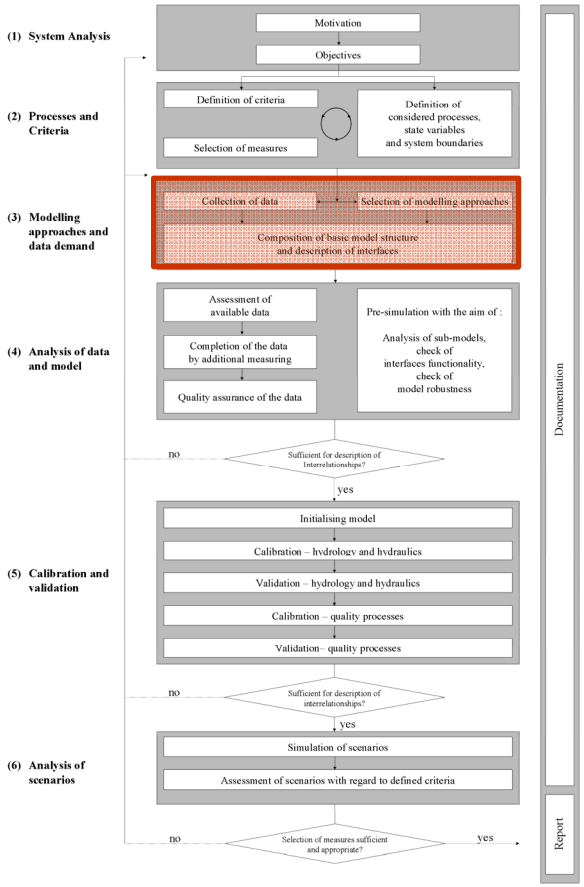
The HSG-procedure

for a systematic setup of integrated models

- Modelling approaches and data demand
  - Collection of data
  - Selection of modelling approaches
  - Composition of
    - Basic model structure
    - Description of interfaces



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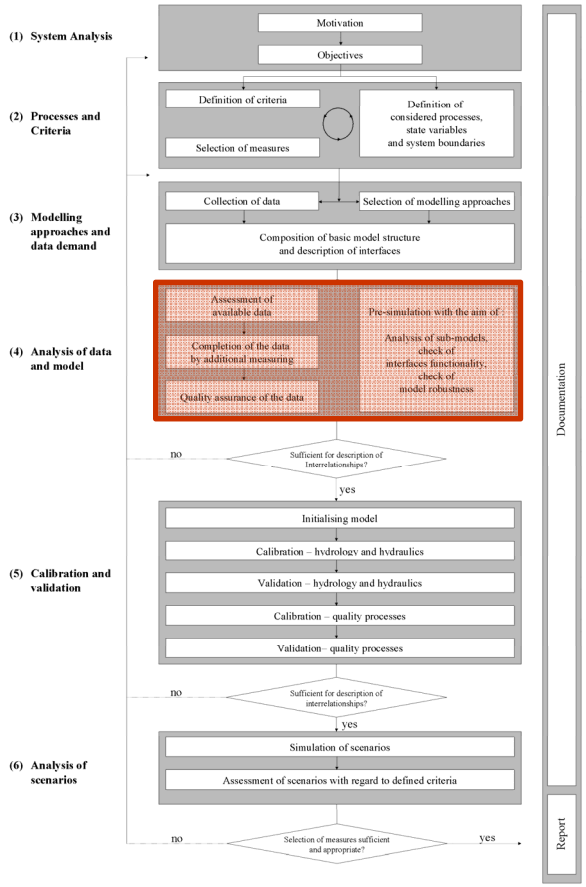
The HSG-procedure

for a systematic setup of integrated models

- Analysis of data and model
  - Assessment of available data
  - Completion of data by additional measurement
  - Quality assurance of data
  - Pre-simulation with the aim of
    - Analysis of sub-models
    - Interface functionality
    - Check of model robustness



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The HSG-procedure

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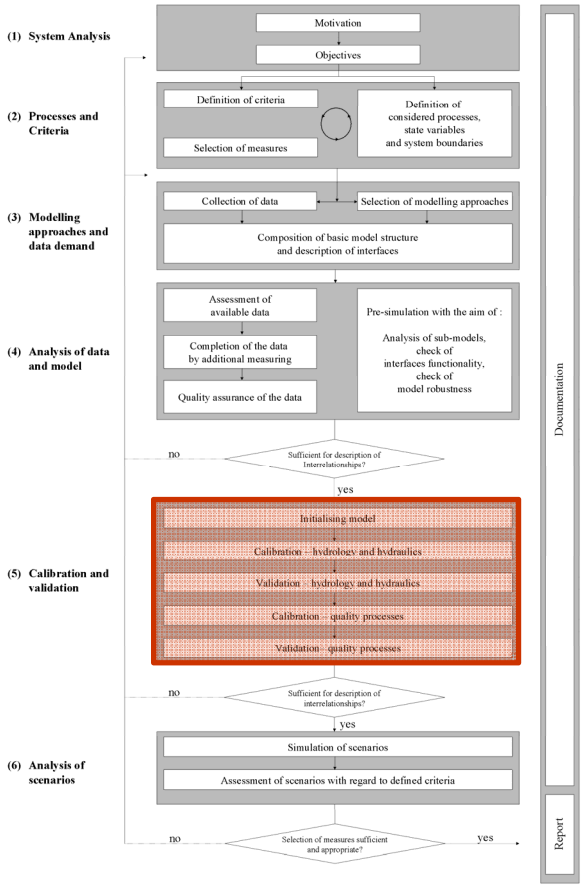
- Calibration and validation
  - Initializing the model
  - Calibration and validation of hydrology and hydraulics
  - Calibration and validation of quality processes



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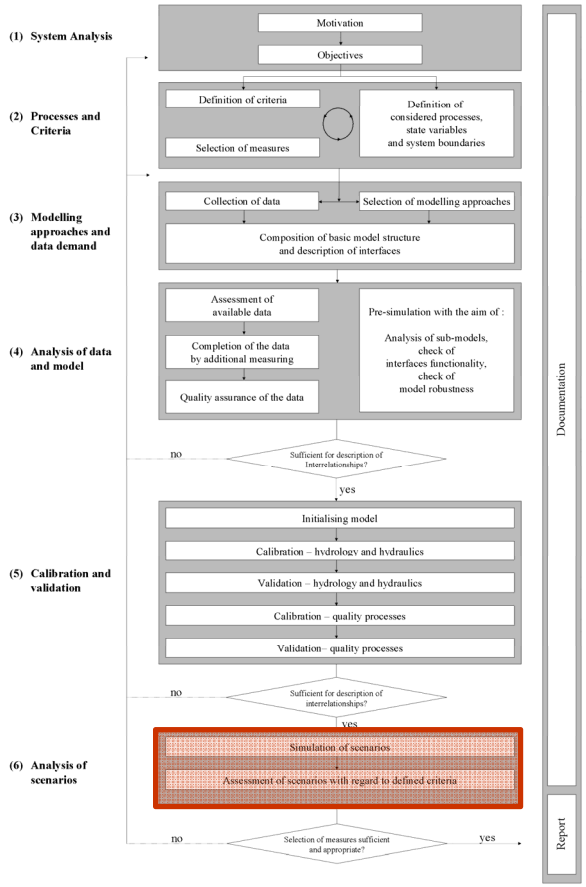
The HSG-procedure

for a systematic setup of integrated models

- Analysis of scenarios
  - Simulation of scenarios
  - Assessment of scenarios with regard to defined criteria



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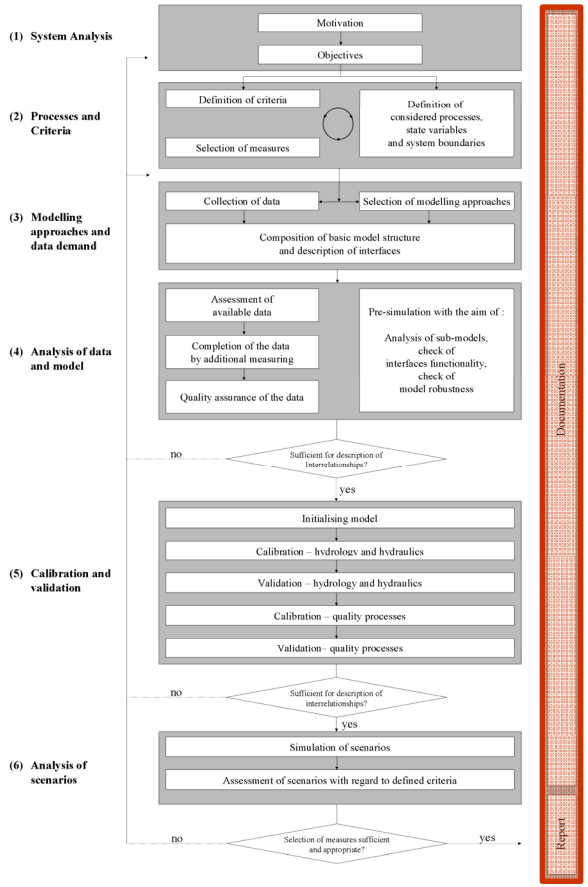
The HSG-procedure

for a systematic setup of integrated models

- Documentation and Report



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How to get

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Thank you!

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