# Fundamentals of Requirements Engineering

by Gerrit Muller USN-SE

e-mail: gaudisite@gmail.com

www.gaudisite.nl

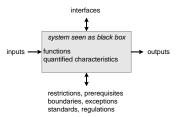
#### **Abstract**

Requirements engineering is one of the systems engineering pillars. In this document we discuss the fundamentals of systems engineering, such as the transformation of needs into specification, the need to prescribe *what* rather than *how*, and the requirements when writing requirements.

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Requirements describing the needs of the customer: Customer Needs

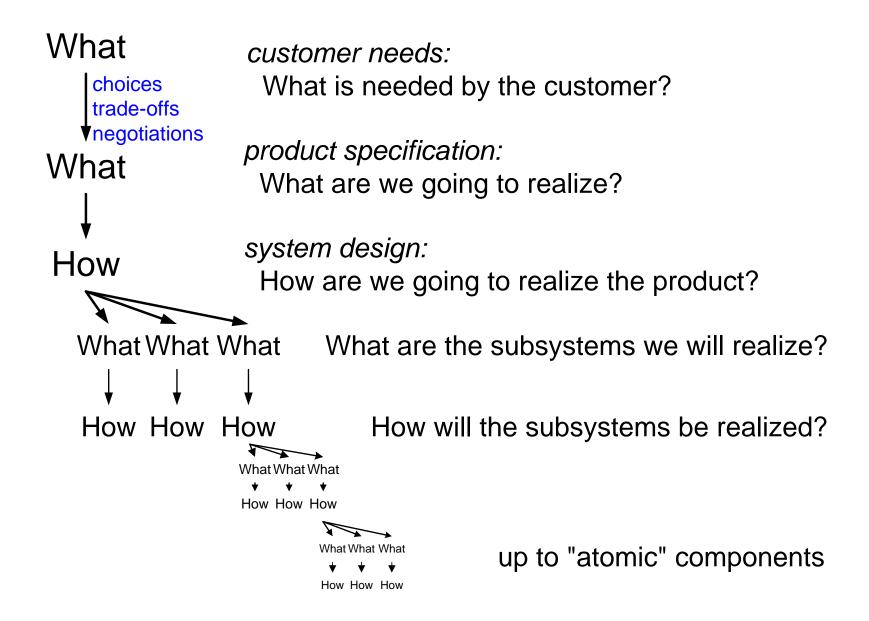
Requirements describing the characteristics of the final resulting system (product): **System (Product) Specification** 

The *requirements management process* recursively applies this definition for every level of decomposition.

Requirements describing the needs of the company itself over the life cycle: *Life Cycle Needs* 

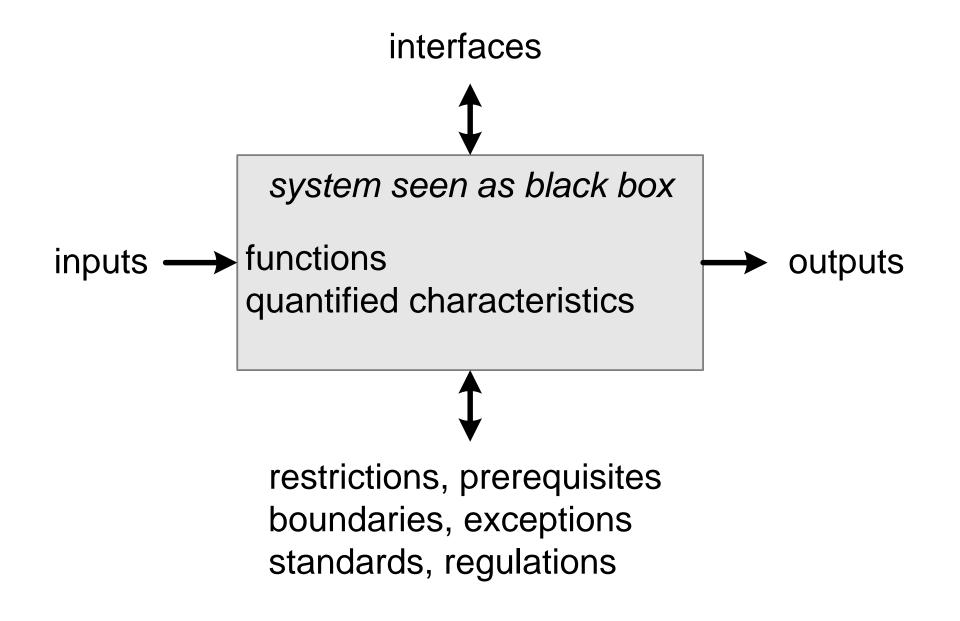


## Flow of Requirements





## System as a Black Box





#### Stakeholders w.r.t. Requirements

#### customer

(purchaser, decision maker, user, operator, maintainer)

#### company

Policy and Planning (business, marketing, operational managers)

Customer-Oriented Process
(sales, service, production, logistics)

Product Creation Process (project leader, product manager, engineers, suppliers)

People, Process, and Technology management process (capability managers, technology suppliers)



## The "Formal" Requirements for Requirements

Specific

Unambiguous

Verifiable

Quantifiable

Measurable

Complete

Traceable



#### The Requirements to Enable Human Use

Accessible

Understandable

Low threshold

