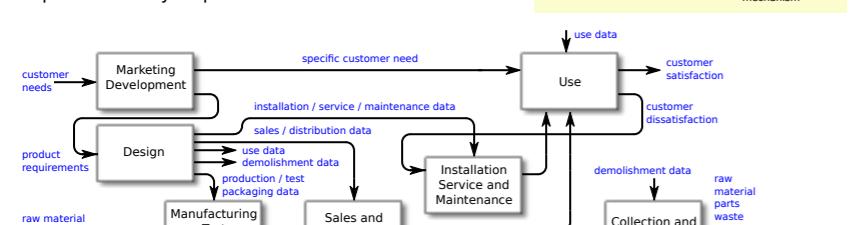


Hierarchically structured Design Method

Requirements from stakeholders in product life-cycle processes



At each hierarchical level:

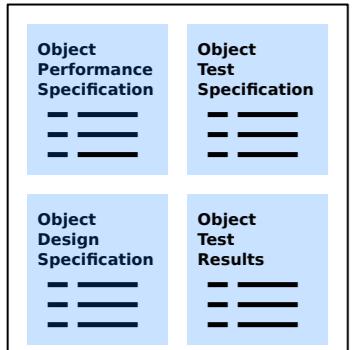
Similar structure of activities:

- Interpretation → Design Objectives and Figure Of Merit (FOM)
- Specification → Object Performance and Object Test Specification
- Generation → Possible Solutions
- Evaluation → Test Results
- Selection → Comparison Matrix and Most Promising Solution

$$FOM = \frac{\text{Product of Weighted Performance Measures}}{\text{Product of Weighted Cost Factors}}$$

At each hierarchical level:

Similar documentation structure:



Different models at each level:

Increasing level of detail

Albert Einstein:

"Everything should be made as simple as it can be, but not simpler"

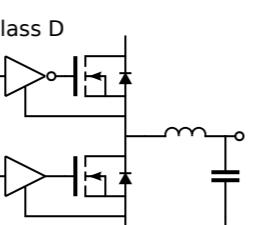
G.P.Box:

"All models are wrong, but some are useful"

- Design method based on concepts from:**
- Physics
 - Information theory (signal processing)
 - Control theory
 - Network theory

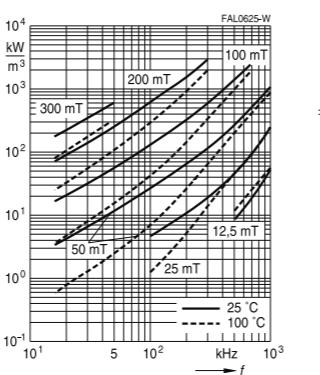
High Efficiency

Amplifier classes AB, D, E, H



Core losses

Relative core losses versus frequency (measured on R34 toroids)



Charge/discharge losses

Driver losses
Conductance losses
Switching losses
Reverse recovery losses
Core losses
Quiescent losses

Charge/discharge losses

$$f_{sw} = \frac{1}{T}, \delta = 50\%$$

Core losses

VISHAY

VE

