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# Model-Based Systems Engineering

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*Fundamentals and Methods*

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ERRATA

page	Currently in the text	Corrected version
5	the definition given in [SEB 13], namely “a system is a set of elements in interaction”.	the definition given in [BKC 13], namely “a system is a set of elements in interaction”.
10	In other words, Dillinger provides us a language description (true or not, this is another topic) as a system hierarchically organized into six levels (true or not, this is another topic):	In other words, Dillinger provides us a language description as a system hierarchically organized into six levels (true or not, this is another topic):
11	Briefly told, an object is concrete or material if and only if it possesses an energy or iff it is capable of being changed.	Briefly told, an object is concrete or material if and only if it possesses an energy or iff it is capable of change.
12	Denotation of a concrete system $\hat{A}(t)$ by the triplet (C (t), E (t), S (t)) allows to highlight its evolution over time	Denotation of a concrete system $\Sigma(t)$ by the triplet (C (t), E (t), S (t)) allows to highlight its evolution over time
13 Figure 1.5		
15	For example, in the field of aeronautics, we can introduce the aircraft gender, and within type we can distinguish at least two species	For example, in the field of aeronautics, we can introduce the aircraft gender, and within this gender, we can distinguish at least two species
17	For example, whether an aircraft has fuel or not, and whether there is a pilot to perform the takeoff or not, forms parts of the conditions of actualization in order for an aircraft to fly.	For example, whether an aircraft has fuel or not, and whether there is a pilot to perform the takeoff or not, form parts of the conditions of actualization in order for an aircraft to fly.
19	As Bunge points out, the emergence [BUN 03] of properties at the level of a system is also accompanied by the submergence of the components properties, i.e. the properties of the components also disappear at the level of the system.	As Bunge points out, the emergence [BUN 03] of properties at the level of a system is also accompanied by the submergence of some components properties, i.e. some properties of the components also disappear at the level of the system.
20	Also, it is in this sense that the modern helicopter emerged into gyrocopters at the beginning of the 20th Century.	Also, it is in this sense that the modern helicopter emerged from gyrocopters at the beginning of the 20th Century
21	the ideal gas law designates the material law linking pressure, temperature and volume of the gas capsule.	the ideal gas law denotes the material law linking pressure, temperature and volume of the gas capsule.
30	the term “function” is systematically considered as a central concept of engineering and is regularly defined as an “intended effect of a system, of a sub-system of a product or a component” [SSE 14].	the term “function” is systematically considered as a central concept of engineering and is regularly defined as an “intended effect of a system, of a sub-system of a product or a component” [BSE 14].
31	Generally speaking, a concrete system $\Sigma$ does not have a function and natural systems, in particular, does not have functions.	Generally speaking, a concrete system $\Sigma$ does not have a function and natural systems, in particular, do not have functions.
35	in the case where electrical energy is transported in electric cables, the Joule is quite the contrary of an undesirable effect, a loss for the operator.	in the case where electrical energy is transported in electric cables, the Joule effect is quite the contrary of an undesirable effect, a loss for the operator.
47	Now, if we consider a context C including the proposition p, the context Citself forms a system	Now, if we consider a context C including the proposition p, the context C itself forms a system

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60	In other words, a system of signs is <b>an abstract</b> system that <b>represents</b> concrete systems or not. No concrete system is <b>represented</b> in the case for logical and basic mathematical theories.	In other words, a system of signs is <b>a concrete</b> system that <b>denotes</b> concrete systems or not. No concrete system is <b>denoted</b> in the case for logical and basic mathematical theories.
87	It is then repeated for each building block for which, at the input of each block at level n, there are acquirer requirements and other stakeholder requirements, whereas at the output, there are requirements <b>specific</b> to the components forming the design solution of the block at level n.	It is then repeated for each building block for which, at the input of each block at level n, there are acquirer requirements and other stakeholder requirements, whereas at the output, there are requirements <b>specified</b> to the components forming the design solution of the block at level n.
98	Specifying a collection E of entities of type K, to be developed, means defining well-formed requirements $\{Req_i\}_{1 \leq i \leq n}$ , such that any entity e belongs to E if and only if e satisfies simultaneously all the requirements $Req_i$ of $\{ \}_{1 \leq i \leq n}$ .	Specifying a collection E of entities of type K, to be developed, means defining well-formed requirements $\{Req_i\}_{1 \leq i \leq n}$ , such that any entity e belongs to E if and only if e satisfies simultaneously all the requirements $Req_i$ of $\{ Req_i \}_{1 \leq i \leq n}$ .
102	This is why we define the set of PBRs assigned to an entity <b>such</b> as the specification model of this entity	This is <b>the reason</b> why we define the set of PBRs assigned to an entity as the specification model of this entity
116	<b>Table 3.2.</b> Tolerances on computed altitude by an ADC required by the SAE-AS8002A	<b>Table 6.2.</b> Tolerances on computed altitude by an ADC required by the SAE-AS8002A
116	the absolute error for the indicated altitude (Indicated_Alt) provided by an ADC installed in an aircraft (AC) <b>should</b> be less than 25 ft	the absolute error for the indicated altitude (Indicated_Alt) provided by an ADC installed in an aircraft (AC) <b>shall</b> be less than 25 ft
118 Figure 6.5		
119	The statement “ <i>the fuel system shall supply fuel to the engine</i> ” <b>it</b> not itself a requirement	The statement “ <i>the fuel system shall supply fuel to the engine</i> ” <b>is</b> not itself a requirement
143	Particularly, <b>the</b> all the interface compatibility problems, both internal and external (with the environment),	Particularly, all the interface compatibility problems, both internal and external (with the environment),
153	It defines an assumption as a statement offered without proof [ARP XX].	It defines an assumption as a statement offered without proof [SAE 10], page 6.
159	Concurrently, <b>an SSM</b> ensures the inputs are in accordance with	Concurrently, <b>the system specification model (SSM)</b> ensures the inputs are in accordance with
213	we first consider the practical and economical interests of <b>these</b> type of systems.	we first consider the practical and economical interests of <b>this</b> type of system.
220	these outputs can <b>be</b> (1) visually indicate the crew of the aircraft equipped with a CAS, all aircraft within its immediate vicinity,	these outputs can (1) visually indicate the crew of the aircraft equipped with a CAS, all aircraft within its immediate vicinity,
224		