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NEW QUESTION: 1

Choose the correct answer

In a scenario-based development approach, which SysML diagram type could best be used to describe the scenarios?

- A. state diagram
- B. activity diagram
- C. use case diagram
- D. requirements diagram

Answer: ([SHOW ANSWER](#))

Explanation

In a scenario-based development approach, use case diagram could best be used to describe the scenarios. A use case diagram shows how actors interact with use cases in different scenarios or situations. A use case diagram can capture the functional requirements and goals of a system or part from different stakeholder perspectives. A use case diagram can also show how use cases are related to each other by generalization, inclusion or extension relationships. A state diagram shows how an object changes its state in response to events or stimuli. A statediagram is not suitable for describing scenarios that involve multiple actors or use cases. An activity diagram shows how actions are performed in a sequence or in parallel by objects or flows.

An activity diagram is not suitable for describing scenarios that involve different situations or alternatives. A requirements diagram shows how requirements are specified, derived, satisfied or verified by model elements.

A requirements diagram is not suitable for describing scenarios that involve interactions or behaviors.

References: OMG-Certified Systems Modeling Professional - Model Builder - Advanced (OCUP2-ADV) Examination Guide Version 1.0, Section 4.2

NEW QUESTION: 2

Choose the correct answer

What are views and viewpoints used to show?

- A. the system under development by the stakeholders
- B. the modeling responsibilities of different stakeholders
- C. the aspects of a model that relate to different stakeholders
- D. the aspects of a model important to users as stakeholders

Answer: (SHOW ANSWER)

Explanation

Views and viewpoints are used to show the aspects of a model that relate to different stakeholders. A view is a representation of a subset of a model that addresses a set of stakeholder concerns. A viewpoint is a specification of a perspective on a model that defines how a view should be constructed and used. By using views and viewpoints, different aspects of a model can be presented in a way that is relevant and understandable for different stakeholders.

References:

<https://www.omg.org/ocsm/ocsm-adv-exam.htm><https://docs.nomagic.com/display/SYSMLP184/Views+and+V>

NEW QUESTION: 3

Choose the correct answer

What does a model library add to a SysML model?

- A. stereotypes
- B. common concepts
- C. domain-specific modeling concepts
- D. methodology-specific modeling concepts

Answer: (SHOW ANSWER)

Explanation

A model library is a package that contains reusable model elements that can be imported into other models. A model library can add common concepts to a SysML model, such as units, quantities, value types, etc. These concepts can be used to define properties and parameters of blocks and constraints in a consistent and standardized way. References:

<https://www.omg.org/ocsm/ocsm-adv-exam.htm><https://www.omg.org/spec/SysML/1.6/PDF>

NEW QUESTION: 4

Choose the correct answer

A company is executing a large distributed engineering project. More than a dozen engineers are contributing to the system model, working from different locations spread across three time zones. The lead engineer has decided that it is essential to maintain a single model. The department director has expressed concern that the project may have trouble employing its engineers productively while still maintaining configuration control of this common model.

Which configuration management strategy is likely to be most successful*?

- A.** Use a centralized repository for the model files. Allow only engineers in the eastern-most time zone to upload changes to the model files in the mornings, and the western engineers in the afternoons. Either can download and view the model files at any time. This will assure maximum productivity while minimizing the possibility of collisions
- B.** Use a configuration management tool to manage model elements. Assign ownership of model elements at the package level- Only the owner of a package may make changes to elements in that package. Note that each relationship between model elements must be contained within a single package
- C.** Use a configuration management tool to manage model elements. Allow packages to be checked out by any user for editing, which locks the elements therein contained. Packages may be viewed in read-only mode by any user at any time. All model users receive alerts when a package they are viewing has been modified and checked-in, and changes are highlighted. Packages may not remain checked out overnight
- D.** Co-locate the modeling team. Trying to maintain configuration of a model across a distributed team is extremely difficult and may not succeed

Answer: (SHOW ANSWER)

Explanation

This configuration management strategy is likely to be most successful because it allows the engineers to work on the system model collaboratively and concurrently, while maintaining configuration control and avoiding conflicts. A configuration management tool is a software tool that helps manage changes to model elements and track their versions and history. A package is a grouping mechanism that can contain any kind of model element, such as diagrams, blocks, activities, etc. By using a configuration management tool, the engineers can check out packages for editing, which locks the elements in that package and prevents other users from modifying them. The engineers can also view packages in read-only mode by any user at any time, which allows them to see the latest version of the model without affecting it. The engineers can also receive alerts when a package they are viewing has been modified and checked-in by another user, and see the changes highlighted. This way, the engineers can stay informed and synchronized with the model updates. By not allowing packages to remain checked out overnight, the engineers can avoid holding up the work of other users who need to access or modify those packages. References:

<https://www.omg.org/ocsm/ocsm-adv-exam.htm><https://sysml.org/tutorials/sysml-diagram-tutorial/>

NEW QUESTION: 5

Choose the correct answer-

Which technique allows a user to objectively determine the best means of implementing a particular function?

- A.** a trade study
- B.** an objective analysis

- C. operational research
- D. a requirements analysts

Answer: (SHOW ANSWER)

Explanation

A trade study is a method for making a decision between competing alternatives based on a set of criteria, such as cost, performance, reliability, etc. A trade study allows a user to objectively determine the best means of implementing a particular function by evaluating and comparing the pros and cons of each alternative. A trade study can also help identify trade-offs and risks associated with each alternative

NEW QUESTION: 6

Choose the coned answer

Which kind of allocation relationship is pivotal m a Y development approach?

- A. function To code
- B. property to structure
- C. requirement to design
- D. function to structure

Answer: (SHOW ANSWER)

Explanation

A V development approach is a systems engineering methodology that follows a V-shaped process model. The left side of the V represents the decomposition of requirements into system and subsystem specifications. The bottom of the V represents the integration and testing of system components. The right side of the V represents the verification and validation of system performance against requirements. A function to structure allocation relationship is pivotal in a V development approach, because it defines how the system functions are realized by the system structure (i.e., components). This relationship enables traceability and consistency between requirements, design, implementation, and testing

NEW QUESTION: 7

Choose the correct answer.

An engineering learn has been charged to design and build an embedded real-time control system using COTS (Commercial Off-The-Shelf) purchased components where possible A technical risk for such a control system is that the system will miss (i.e . fail to respond to) critical inputs The project has the additional risk that there may not be any components on the market that will meet both timing and cost constraints Given this, what information must be in the model before the engineering team can begin selecting and procuring COTS components?

- A. timing constraints for all behaviors involved in responding to a critical input
- B. (1) liming constraints for all behaviors involved in responding to a critical input (2) total system production cost provided by the customer

C. (1) minimum period of time between any two successive critical inputs (2) maximum acceptable time to produce all outputs for a critical input (3) allocation of (2) to all behaviors involved in responding to a critical input (4) total system production cost provided by the customer

D. (1) minimum period of time between any two successive critical inputs (2) maximum acceptable time to produce all outputs for a critical input (3) allocation of (2) to all behaviors involved in responding to a critical input (4) total system production cost provided by the customer (5) allocation of (4) to system components

E. (1) minimum period of time between any two successive critical inputs (2) maximum number of critical inputs that will arrive in a given time interval (3) maximum acceptable time to produce all outputs for a critical input (4) allocation of (3) to all behaviors involved in responding to a critical input (5) total system production cost provided by the customer (6) allocation of (5) to system components

Answer: E (LEAVE A REPLY)

Explanation

The information in option E is necessary and sufficient for the engineering team to begin selecting and procuring COTS components for the embedded real-time control system. This information defines the timing and cost requirements and constraints for the system and its components, which are essential for evaluating and comparing the available COTS components. The other options are either incomplete or irrelevant for this purpose. For example, option A does not include the minimum period of time between critical inputs, the maximum number of critical inputs, or the cost information. Option B does not include the minimum period of time between critical inputs or the maximum number of critical inputs. Option C does not include the maximum number of critical inputs or the allocation of cost to system components. Option D does not include the maximum number of critical inputs.

NEW QUESTION: 8

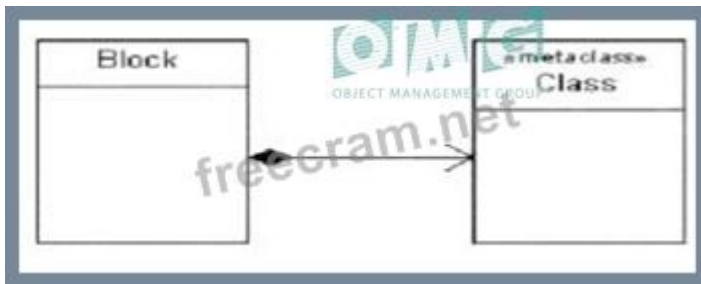
Choose the correct answer.

Which diagram fragment correctly a SysML Block extending a basic UM Class?

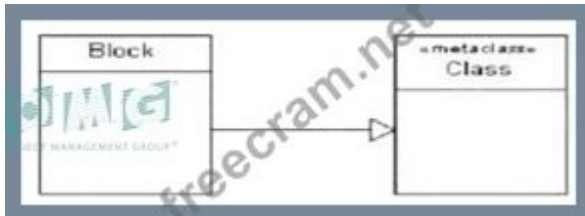
A)



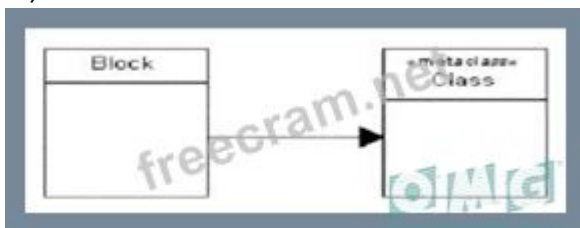
B)



C)



D)



E)



A. Option A

B. Option B

C. Option C

D. Option D

Answer: (SHOW ANSWER)

Explanation

The diagram fragment that correctly shows a SysML Block extending a basic UML Class is Option B.

This option shows a Block with the stereotype <<block>> applied to it. This stereotype indicates that the Block is an extension of the Class metaclass. The Block inherits all the features of the Class, such as attributes, operations, associations, etc., and adds additional features specific to SysML, such as ports, flows, values, constraints, etc. References:

<https://www.omg.org/ocsm/ocsm-adv-exam.htm><https://sysml.org/sysml-faq/what-is-block-definition-diagram>.

NEW QUESTION: 9

Choose the correct answer

A design team is applying the MARTE profile to its model to add information about timing and resources. What is a best practice to provide the MARTE information to the engineers who require it?

- A. Define a viewpoint and conform views for the engineers
- B. Always show the MARTE stereotypes and properties in the diagrams
- C. Define a model library that encapsulates the MARTE data for the engineers
- D. Create a separate model for the MARTE data and import it into the system model.

Answer: (SHOW ANSWER)

Explanation

A best practice to provide the MARTE information to the engineers who require it is to define a viewpoint and conform views for the engineers. A viewpoint is a specification of a perspective on a model that addresses a set of stakeholder concerns. A view is a representation of a model that conforms to a viewpoint. By defining a viewpoint and conform views for the engineers, the MARTE information can be presented in a way that is relevant and understandable for them.

References:

<https://www.omg.org/ocsm/ocsm-adv-exam.htm><https://www.omg.org/spec/MARTE/1.2/About-MARTE/>

NEW QUESTION: 10

Choose the correct answer

How does the Survey of MBSE Methodologies define a methodology

- A. A methodology consists of techniques for performing a single task
- B. A methodology is a collection of related processes, methods, and tools
- C. A methodology is an instrument that can enhance the efficiency of a task
- D. A methodology is a logical sequence of tasks to achieve particular objective

Answer: A (LEAVE A REPLY)

Explanation

According to the Survey of MBSE Methodologies 1, a methodology is defined as a collection of related processes, methods, and tools. A process is a sequence of steps or activities that transform inputs into outputs.

A method is a technique or procedure for performing a specific task. A tool is an instrument or device that supports or automates a process or method. A methodology integrates these elements to support a specific domain or purpose.

NEW QUESTION: 11

Choose the correct answer

Understanding OCL is important to the understanding of which item(s)?

- A. a typical high-level domain model
- B. tool-generated XMI for a SysML model
- C. both the UML and SysML specifications
- D. software developers' modifications to a SysML model

Answer: ([SHOW ANSWER](#))

Explanation

OCL is important to the understanding of both the UML and SysML specifications because it is used to define the semantics and constraints of the modeling elements and relationships in both languages. OCL is part of the UML standard and is adopted by SysML as a complementary language. OCL can also be used to specify queries, expressions and operations on models. OCL is not directly related to a typical high-level domain model, tool-generated XMI for a SysML model, or software developers' modifications to a SysML model.

References: OMG-Certified Systems Modeling Professional - Model Builder - Advanced (OCUP2-ADV) Examination Guide Version 1.0, Section 4.3

NEW QUESTION: 12

Choose the coned answer

What is the best way to ensure that a shared model has consistently-represented elements and diagrams?

- A. Implementation of standard libraries
- B. modeling conventions and standards
- C. packages that map one-for-one to components
- D. domain stereotypes maintained in a configuration control system

Answer: ([SHOW ANSWER](#))

Explanation

The best way to ensure that a shared model has consistently-represented elements and diagrams is to use modeling conventions and standards. Modeling conventions and standards are rules and guidelines that define how the model elements and diagrams should be named, defined, structured, formatted and documented.

Modeling conventions and standards can help improve the clarity, consistency and quality of the model and facilitate the communication and collaboration among the modelers and stakeholders. Implementation of standard libraries is a good way to ensure that a shared model has reusable and interoperable elements and diagrams, but it may not ensure their consistent representation. Packages that map one-for-one to components is a good way to ensure that a shared model has modular and traceable elements and diagrams, but it may not ensure their consistent representation. Domain stereotypes maintained in a configuration control system is a good way to ensure that a shared model has customized and controlled elements and diagrams, but it may not ensure their consistent representation. References: OMG-Certified Systems Modeling Professional - Model Builder - Advanced (OCUP2-ADV) Examination Guide Version 1.0, Section 4.1

NEW QUESTION: 13

Choose the correct answer

The main diagram type in Modelica corresponds most closely to which SysML diagram type?

- A. act

- B. bdd
- C. ibd
- D. par

Answer: ([SHOW ANSWER](#))

Explanation

The main diagram type in Modelica corresponds most closely to the ibd (internal block diagram) in SysML.

An ibd shows the internal structure of a block in terms of its parts, ports, connectors, and flows. It is similar to a Modelica diagram, which shows the components of a model in terms of their connectors and equations. Both diagram types can be used to represent physical systems composed of interconnected elements with defined behaviors and properties. References: <https://www.omg.org/ocsm/ocsm-adv-exam.htm><https://modelica.org/documents/ModelicaSpec34.pdf>

NEW QUESTION: 14

Choose the correct answer

What is the key distinction between SysML modeling and MOF modeling?

- A. MOF models are used for domain-independent modeling SysML models are used for domain-specific modeling.
- B. MOF models are intended to be models of modeling constructs SysML models represent real world entities and processes.
- C. MOF models are intended to be strictly models of abstract entities SysML models represent real world entities and processes
- D. They both have the same purpose except that MOF modeling is intended for specialized and advanced usage by systems architects

Answer: ([SHOW ANSWER](#))

Explanation

MOF stands for Meta-Object Facility, which is a standard for defining metamodels. Metamodels are models of modeling constructs, such as classes, attributes, associations, etc. SysML stands for Systems Modeling Language, which is a standard for modeling complex systems using diagrams and textual notations. SysML models represent real world entities and processes, such as components, behaviors, requirements, etc. The key distinction between SysML modeling and MOF modeling is that SysML models are instances of a metamodel defined by MOF. References: <https://www.omg.org/ocsm/ocsm-adv-exam.htm>
<https://www.omg.org/mof/><https://www.omg.org/sysml/>

NEW QUESTION: 15

Choose the correct answer

How is the concept of coupling used to assess model quality?

- A. High coupling leads to good model quality provided all blocks in a structural model exhibit the same average degree of coupling

- B.** High coupling leads to poor model quality because it decreases reuse potential and prevents independent modification of system elements
- C.** Low coupling leads to poor model quality because all parts of a system must be properly coupled in order to measure the completeness of the model
- D.** Coupling has no bearing on model quality because no metrics exist for measuring the level of coupling of SysML models

Answer: ([SHOW ANSWER](#))

Explanation

Coupling is a measure of how much a system element depends on other system elements. High coupling means that a change in one element affects many other elements, which makes the system harder to understand, maintain and reuse. Low coupling means that the system elements are more independent and modular, which improves the model quality. References: OMG-Certified Systems Modeling Professional - Model Builder - Advanced (OCUP2-ADV) Examination Guide Version 1.0, Section 4.1.2.2

NEW QUESTION: 16

Choose the correct answer

What characterizes a complete SysML model?

- A.** All of its element trace back to requirements that are within the scope of the project
- B.** It uses all SysML diagram types to model all aspects of the system or part being modeled.
- C.** It includes a complete set of SysML constructs and associations for the system being modeled
- D.** It has all the necessary information relevant at the level of abstraction that the model represents.

Answer: ([SHOW ANSWER](#))

Explanation

A complete SysML model is one that has all the necessary information relevant at the level of abstraction that the model represents. A complete model does not necessarily have to trace back to all requirements, use all diagram types, or include all constructs and associations. A complete model should capture the essential features and properties of the system or part being modeled, without being too detailed or too abstract. A complete model should also be consistent, coherent and correct. References: OMG-Certified Systems Modeling Professional - Model Builder - Advanced (OCUP2-ADV) Examination Guide Version 1.0, Section

4.1

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NEW QUESTION: 17

Choose the correct answer.

Which versions of the various Architectural Frameworks does UPDM 1.0 officially support?

- A. DoDAF 1.0 and MODAF 1.2
- B. DoDAF 1.5, MODAF 1.2, and NAF 3.0
- C. DoDAF 1.5 and 2.0, and MODAF 1.2
- D. DoDAF 1.5 and MODAF 1.2

Answer: (SHOW ANSWER)

Explanation

The versions of the various Architectural Frameworks that UPDM 1.0 officially supports are DoDAF 1.5 and

2.0, and MODAF 1.2. UPDM 1.0 provides two sets of profiles: one for DoDAF 1.5 and MODAF 1.2 based on the UPDM 1.1 metamodel, and another for DoDAF 2.0 based on the same metamodel. UPDM 1.0 does not support NAF (NATO Architecture Framework), which is another architectural framework used in the defense domain. References:

<https://www.omg.org/ocsm/ocsm-adv-exam.htm><https://www.omg.org/spec/SyM/1.0/About-SyM/>

NEW QUESTION: 18

Choose the correct answer

What is a common reason for extending SysML with a profile?

- A. SysML requires the definition of a profile
- B. A profile adds methodology- and domain-specific concepts to SysML.
- C. A profile adds user-specific needs to the model in a systems engineering project
- D. A profile overwrites unwanted SysML concepts and tool-vendor-specific extensions

Answer: (SHOW ANSWER)

Explanation

A profile is a mechanism for extending SysML with additional modeling elements that are not part of the standard language. A profile can add methodology- and domain-specific concepts to SysML, such as stereotypes, tagged values, constraints, etc. These concepts can be used to tailor SysML to specific engineering domains or modeling methods. References:

<https://www.omg.org/ocsm/ocsm-adv-exam.htm>https://www.ibm.com/docs/SSB2MU_8.2.0/com.ibm.rhp.sysm

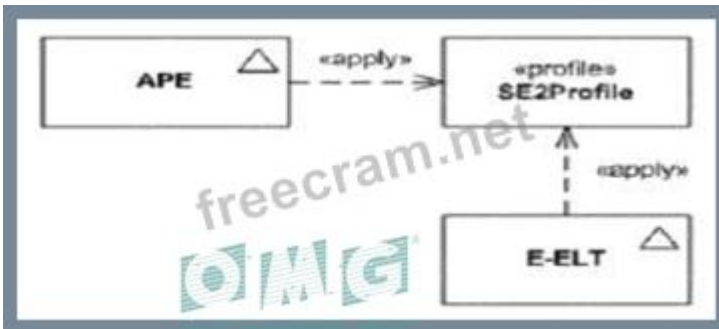
NEW QUESTION: 19

Choose the correct answer.

An engineer has defined a profile, SE2Profile, for the APE model. Another model, E-ELT, requires the same profile.

What is the best way to share the profile?

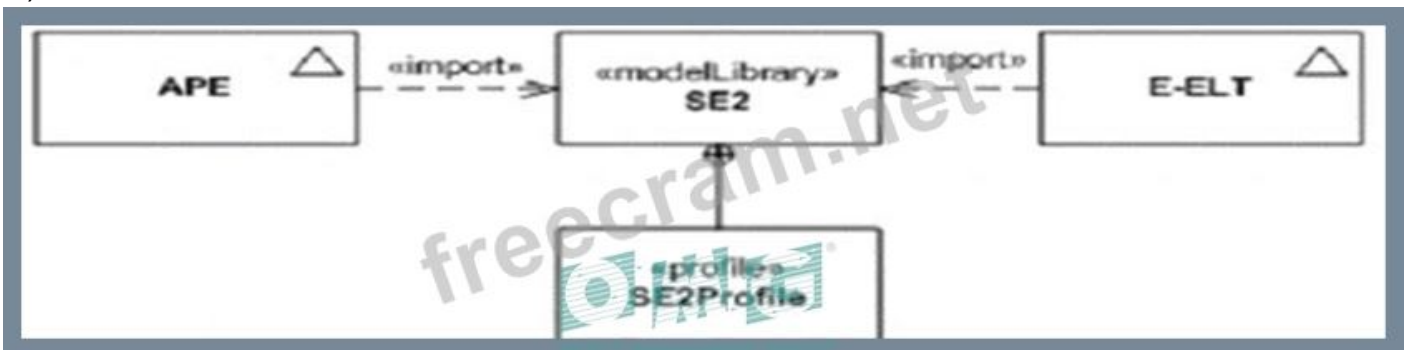
A)



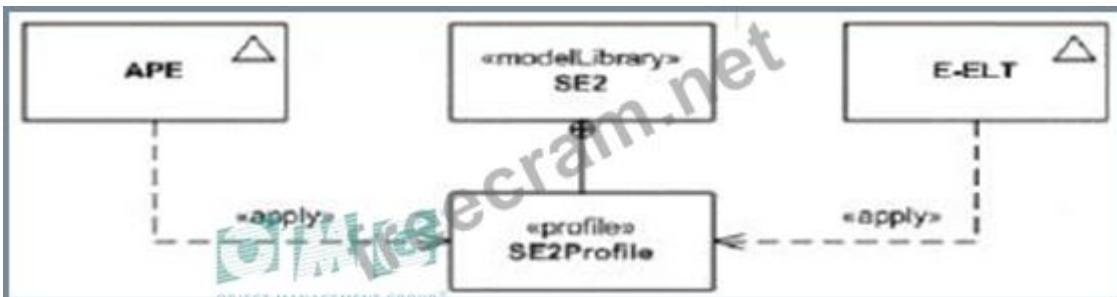
B)



C)



D)



A. Option A

B. Option B

C. Option C

D. Option D

Answer: (SHOW ANSWER)

Explanation

The best way to share the profile is to define it as a model library and import it into the other model. A model library is a package with the stereotype «modelLibrary» applied to it. It contains reusable model elements that can be imported into other models by using an "import" relationship. Option B shows this approach.

References: <https://www.omg.org/ocsmpp/ocsmpp-adv-exam.htm>
<https://www.omg.org/spec/SysML/1.6/PDF>

NEW QUESTION: 20

Choose the correct answer

is it possible to conduct a systems engineering project without applying a methodology?

- A. Yes. if only the project's tasks are defined
- B. Yes. if only the project's processes are defined.
- C. No. system engineering projects will fail if no dedicated methodology is applied
- D. No. even if a formal methodology is applied, working spontaneously is considered to be a methodology

Answer: (SHOW ANSWER)

Explanation

A methodology is a set of principles, methods and practices that guide the execution of a project or activity. A systems engineering project always involves some kind of methodology, even if it is not explicitly defined or documented. Working spontaneously or randomly is also a form of methodology, although it may not be very effective or efficient. A systems engineering project cannot be conducted without applying any methodology at all. References: OMG-Certified Systems Modeling Professional - Model Builder - Advanced (OCUP2-ADV) Examination Guide Version 1.0, Section 4.5

NEW QUESTION: 21

Choose the correct answer

Which SysML diagram type is a modification of the UML Class diagram?

- A. Parametric Diagram
- B. Internal Block Diagram
- C. Package Diagram
- D. Block Definition Diagram

Answer: (SHOW ANSWER)

Explanation

The SysML diagram type that is a modification of the UML Class diagram is the Block Definition Diagram (BDD). A BDD shows the definition of blocks in terms of their features, such as properties, operations, ports, etc. It is similar to a UML Class diagram, but it adds some features specific to SysML, such as value types, units, flow properties, etc. A block is an extension of the UML Class metaclass that can be used to model any system component with structure and behavior. References:

<https://www.omg.org/ocsmpp/ocsmpp-adv-exam.htm>
<https://sysml.org/tutorials/sysml-diagram-tutorial/>

NEW QUESTION: 22

Choose the correct answer

What distinguishes a software development methodology from a systems development methodology?

- A.** All current systems development methodologies are extensions of previous software development methodologies.
- B.** Software development methodologies employ formal architecting techniques, while systems development methodologies tend not to.
- C.** Systems development methodologies tend to focus on holistic issues, while software development methodologies tend to focus on high quality code.
- D.** For software intensive systems, there is effectively no difference between system development methodologies and software development methodologies
- E.** There is no difference Any methodology good for software development should be good for systems development.

Answer: (SHOW ANSWER)

Explanation

The main difference between software development methodologies and systems development methodologies is that software development methodologies tend to focus on high quality code, such as functionality, reliability, performance and maintainability, while systems development methodologies tend to focus on holistic issues, such as stakeholder needs, system boundaries, interfaces, trade-offs and lifecycle management.

Software development methodologies are usually applied to software-intensive systems or subsystems, while systems development methodologies are usually applied to complex systems that involve multiple disciplines and domains. It is not true that all current systems development methodologies are extensions of previous software development methodologies, as some systems development methodologies have different origins and foundations. It is not true that software development methodologies employ formal architecting techniques, while systems development methodologies tend not to, as both types of methodologies can use different levels of formality and rigor in their architecting approaches. It is not true that for software intensive systems, there is effectively no difference between system development methodologies and software development methodologies, as software intensive systems still require a broader and deeper perspective than software development methodologies can provide. It is not true that there is no difference between any methodology good for software development and any methodology good for systems development, as different types of systems may require different types of methodologies that suit their characteristics and challenges. References:

OMG-Certified Systems Modeling Professional - Model Builder - Advanced (OCUP2-ADV)
Examination Guide Version 1.0, Section 4.5

NEW QUESTION: 23

Choose the correct answer

An engineer using SysML modeling tool B imports an XMI die produced by SysML modeling tool A (containing a complete model) and makes changes to the model What is the best way XMI provides to introduce the changes back to the original model in the original tool (Tool A)?

- A. Export only the modified and new elements to XMI and import it to Tool A.
- B. Produce a special XMI file expressing the differences from the original XMI and import it into Tool A
- C. Partition the models and exchange parts of the models after identifying the parts that were changed.
- D. Import the entire model back to Tool A as a separate copy and use the tool's diff/merge utility to merge in the changes

Answer: (SHOW ANSWER)

Explanation

XMI is a standard format for exchanging metadata information via XML, such as UML models. XMI supports a mechanism for producing a special XMI file that contains only the differences between two versions of a model, called a difference model. This file can be imported into another tool to apply the changes to the original model. This approach is more efficient and reliable than exporting and importing the entire model or parts of it

NEW QUESTION: 24

Choose the correct answer

A systems engineer is responsible for deploying a model-based systems engineering approach on an unprecedented system, with unclear or incomplete user and system requirements.

What is the most important factor the engineer should consider in selecting a system development methodology?

- A. the ability to rapidly prototype the user interface
- B. access to a large model library and legacy code base
- C. a robust ontology for characterizing complex systems
- D. the ability to rapidly explore required system functionality
- E. direct support for quickly characterizing and prototyping services

Answer: (SHOW ANSWER)

Explanation

The most important factor that the engineer should consider in selecting a system development methodology for an unprecedented system with unclear or incomplete user and system requirements is the ability to rapidly explore required system functionality. The ability to rapidly explore required system functionality means that the system development methodology can support the elicitation, analysis, validation and verification of the user and system requirements through various techniques, such as use cases, scenarios, prototypes, simulations and tests. The ability to rapidly explore required system functionality can help reduce the uncertainty and ambiguity of the requirements and increase the confidence and satisfaction of the stakeholders. The ability to rapidly prototype the user interface is a less important factor that may not be relevant or applicable to all systems or projects. Access to a large model library and legacy code base is a less important factor that may not be available or suitable for an unprecedented system. A robust ontology for characterizing complex systems is a less important factor that may not be necessary or sufficient for defining the requirements. Direct support for quickly characterizing and

prototyping services is a less important factor that may not be relevant or applicable to all systems or projects. References: OMG-Certified Systems Modeling Professional - Model Builder - Advanced (OCUP2-ADV) Examination Guide Version 1.0, Section 4.5

NEW QUESTION: 25

Choose the correct answer

What is the forward temporal order of these development stages?

* needs analysis

* system acceptance

* system design * trade study

A. needs analysis, system acceptance, system design, trade study

B. needs analysis, system design, system acceptance, trade study

C. needs analysis, system design, trade study, system acceptance

D. needs analysis, trade study, system design, system acceptance

E. trade study, needs analysis, system design system acceptance

Answer: ([SHOW ANSWER](#))

Explanation

The forward temporal order of these development stages is based on the typical sequence of activities in a system engineering process. Needs analysis is the first stage, where the problem and the stakeholder needs are defined. System design is the second stage, where the system architecture and requirements are developed.

Trade study is the third stage, where alternative solutions are evaluated and compared based on various criteria. System acceptance is the final stage, where the system is verified, validated, and delivered to the customer.

NEW QUESTION: 26

Choose the correct answer

A project is developing a distributed information system that will be "open" in the following ways.

(a) The system-level models will be published for the world to see.

(b) Others will be encouraged to submit change requests to the system models. (Changes will be identified by stereotypes.)

(c) Others will be encouraged to develop additional subsystems and plug-ins The information system is expected to be in use for at least ten years What is(are) the most important consideration(s) in selecting a SysML modeling tool for this project?

A. the ability to enforce strict compliance with XMI. AP233 and SysML standards

B. compatibility with XMI. the ability to enforce strict compliance with UML4SysML. and the ability to query models based on user-defined criteria

C. compatibility with XMI. the ability to enforce strict compliance with the SysML standard and the ability to query models based on user- defined criteria

D. compatibility with AP233; the ability to enforce strict compliance with the SysML standard; and the ability to query models based on user-defined criteria

Answer: ([SHOW ANSWER](#))

Explanation

These are the most important considerations in selecting a SysML modeling tool for this project because they ensure that the tool can support the openness and longevity of the distributed information system. XMI (XML Metadata Interchange) is a format specification that enables the interchange of objects and models through an XML formatted file. It is based on a metamodel that defines the mapping of MOF concepts to XML concepts.

By having compatibility with XMI, the tool can import and export SysML models in terms of XML elements and attributes. This allows the tool to publish the system-level models for the world to see and to receive change requests from others in a standardized format. The tool can also use stereotypes to identify changes made by others. The SysML standard is an extension of the UML standard that defines a modeling language for systems engineering. It specifies the abstract syntax, semantics, and notation for SysML concepts and diagrams. By having the ability to enforce strict compliance with the SysML standard, the tool can ensure that the system-level models are consistent and interoperable with other tools and models that follow the same standard. The tool can also support others to develop additional subsystems and plug-ins using SysML concepts and diagrams. By having the ability to query models based on user-defined criteria, the tool can enable users to search and filter system-level models according to their needs and interests. The tool can also support visualization and analytics of system-level models using queries. References:

<https://www.omg.org/ocsm/ocsm-adv-exam.htm><https://sysml.org/tutorials/sysml-diagram-tutorial/>

NEW QUESTION: 27

Choose the correct answer

For a system with stringent real-time requirements and power-consumption constraints, which concern would lead the designer to employ the MARTE profile?

- A. ensuring traceability between structure and behavior
- B. ensuring traceability between requirements and structure
- C. ensuring that the structure could be precisely modeled and that analysis was supported
- D. ensuring that the relationship between system response time and power consumption could be captured in a parametric diagram

Answer: (SHOW ANSWER)

Explanation

For a system with stringent real-time requirements and power-consumption constraints, the concern that would lead the designer to employ the MARTE profile is ensuring that the structure could be precisely modeled and that analysis was supported. MARTE provides concepts and annotations for modeling the structure of real-time and embedded systems in terms of components, ports, connectors, flows, etc., as well as for modeling their behavior in terms of state machines, activities, etc. MARTE also provides concepts and annotations for performing analysis of system properties, such as schedulability, performance, power consumption, etc., using various methods and tools. References:

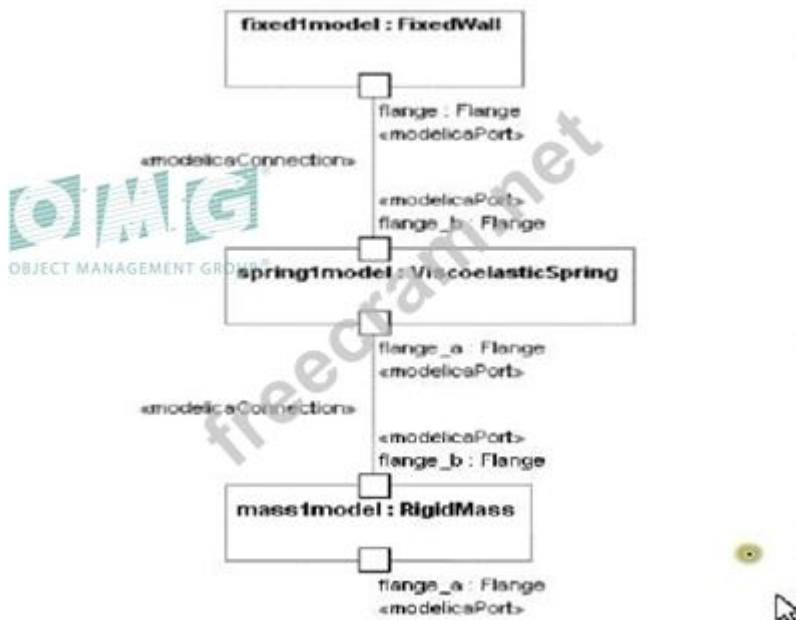
https://www.omg.org/ocsm/ocsm-adv-exam.htmhttps://www.omg.org/spec/MARTE/1.2/About-MARTE/

NEW QUESTION: 28

Choose the correct answer.

Given the following diagram:

ibd [ModelicaModel] ViscoelasticOscillator [ViscoelasticOscillator]



Assume that all stereotypes required by the SysML-Modelica Transformation specification (if any) have been applied but are not necessarily shown here Assume that FixedWall.

ViscoelasticSpring. and RigidMass are fully defined in a Modelica library.

What else must be done to get this model ready for solving according to the SysML-Modelica Transformation specification?

- A. Provide specific values. Also define a parametric diagram that includes equations for Kirchhoffs Laws consistent with the above ibd.
- B. Provide specific values Nothing else is required, as Kirchhoff's I laws are automatically taken care of consistent with the above ibd
- C. Nothing - it is ready as-is
- D. Modelica cannot handle this type of nonlinear model

Answer: (SHOW ANSWER)

Explanation

To get this model ready for solving according to the SysML-Modelica Transformation specification, one must provide specific values for the parameters and properties of the blocks, such as resistance, capacitance, voltage, etc. Also, one must define a parametric diagram that includes equations for Kirchhoff's Laws consistent with the above ibd. A parametric diagram is a SysML diagram that shows constraints and parameters on blocks and their properties. Kirchhoff's Laws are physical laws that describe how electric currents and voltages behave in a circuit. By defining a parametric diagram with these equations, one can specify how the blocks and connectors in the ibd are related mathematically. References:

NEW QUESTION: 29

Choose the correct answer

A stereotype is defined in a profile This stereotype has two properties whose types were already defined in the model What must be done to reuse their type definitions?

- A. The package defining the types needs to apply the profile.
- B. The package defining the types needs to import the profile
- C. The profile needs to apply the package where these types are defined.
- D. The profile needs to import the package where these types are defined.

Answer: (SHOW ANSWER)

Explanation

To reuse the type definitions of the properties of a stereotype, the profile needs to import the package where these types are defined. An import relationship indicates that the elements in one package can be referenced by another package without a qualified name. By importing the package with the types, the profile can use them as attributes of the stereotype without having to redefine them. References:

<https://www.omg.org/ocsm/ocsm-adv-exam.htm>https://www.ibm.com/docs/SSB2MU_8.2.0/com.ibm.rhp.sysm

NEW QUESTION: 30

Choose the correct answer.

What is common practice when integrating software models into SysML system models?

- A. The software is specified with UML in the SysML system model
- B. The software is specified with SysML in the SysML system model.
- C. Cross-relationships are defined between a UML software model and a SysML system model
- D. A model-to-model transformation integrates a UML software model into a SysML system model

Answer: (SHOW ANSWER)

Explanation

The common practice when integrating software models into SysML system models is to define cross-relationships between a UML software model and a SysML system model. A cross-relationship is a dependency that indicates a link between elements in different models or domains. By using cross-relationships, one can establish traceability and consistency between the software model and the system model without having to merge or transform them. Cross-relationships can also support allocation of software components to hardware or other software components in the system model. References:

<https://www.omg.org/ocsm/ocsm-adv-exam.htm><https://www.ibm.com/docs/bg/rhapsody/8.3.1?topic=function>

NEW QUESTION: 31

Choose the correct answer.

Every night the computers at the data center of Bank F, located in Asia, must complete an analysis of the previous day's financial transaction data. Bank F plans to merge with Bank G, located in South America, increasing the volume of data by an order of magnitude. The design team charged with expanding the facilities to handle this additional load is modeling the data center with SysML using the MARTE profile. Which capability of MARTE will help determine whether the existing processors at the data center can handle the anticipated data increase?

- A. support for schedulability analysis
- B. support for embedded systems such as the processors
- C. support for comparative analysis of processor architectures
- D. support for modeling scheduled events that occur in different time zones

Answer: (SHOW ANSWER)

Explanation

The capability of MARTE that will help determine whether the existing processors at the data center can handle the anticipated data increase is support for schedulability analysis.

Schedulability analysis is a technique for verifying that a set of tasks can be executed within given time constraints on a given platform.

MARTE provides concepts and annotations for modeling tasks, resources, scheduling policies, deadlines, etc., and for performing schedulability analysis using various methods and tools.

References:

<https://www.omg.org/ocsm/ocsm-adv-exam.htm><https://www.omg.org/spec/MARTE/1.2/About-MARTE/>

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NEW QUESTION: 32

Choose the correct answer

An engineer wants to place formal pre-conditions and post-conditions on an activity diagram. Which language is suitable and most compatible with SysML?

- A. BPMN
- B. English
- C. OCL
- D. OWL

- E. VSL
- F. XMI
- G. XML

Answer: ([SHOW ANSWER](#))

Explanation

OCL is the most suitable and compatible language for placing formal pre-conditions and post-conditions on an activity diagram. OCL is part of the UML standard and can be integrated with SysML without any conflicts or inconsistencies. OCL can express complex logical expressions that can check the state of the system before and after an activity is executed. BPMN is a business process modeling language that is not compatible with SysML. English is a natural language that may not be precise or unambiguous enough for formal specifications. OWL is a web ontology language that is not designed for modeling activities or constraints.

VSL is a value specification language that can only express simple values and expressions. XMI and XML are markup languages that are used for exchanging models between tools, not for specifying constraints on models. References: OMG-Certified Systems Modeling Professional - Model Builder - Advanced (OCUP2-ADV) Examination Guide Version 1.0, Section 4.3

NEW QUESTION: 33

Choose the correct answer

In addition to selecting the methodology activities to be performed, what other tailoring does the systems modeling team need to consider when defining the project methodology?

- A. which activities will interact with external systems
- B. which kind of diagrams will be used to create the domain model
- C. which artifacts need to be produced when executing the tailored activities
- D. which requirements will be allocated to the specialty engineering activities

Answer: ([SHOW ANSWER](#))

Explanation

An artifact is a tangible or intangible product or outcome of an activity or process. Examples of artifacts include models, diagrams, documents, reports, etc. When defining the project methodology, the systems modeling team needs to consider which artifacts need to be produced when executing the tailored activities, because this determines what information needs to be captured, communicated, and delivered throughout the project lifecycle. The artifacts should be aligned with the project objectives, scope, deliverables, and quality standards

NEW QUESTION: 34

Choose the correct answer

The director of field support for a company just found out that one of the company's systems engineers is a Model Based Systems Engineering expert, and wants to discuss how MBSE might impact how the company's products are supported in the field. What is the most important aspect of system development methodologies the engineer is likely to discuss?

- A. how field support operations can be modeled using MBSE methods

B. how software design patterns can be used to suggest Pre Planned Product Improvement (P3I) opportunities

C. how the system model can be used to facilitate change proposals, support plans, and training in the operational environment

D. how operational evaluation (OPEVAL) plans can be developed and cross-checked In a system modeling environment, using DoDAF operational views

Answer: (SHOW ANSWER)

Explanation

The most important aspect of system development methodologies that the engineer is likely to discuss with the director of field support is how the system model can be used to facilitate change proposals, support plans, and training in the operational environment. The system model can provide a consistent and comprehensive view of the system's structure, behavior and performance throughout its lifecycle, and can help identify and evaluate potential changes, improvements or issues in the field. The system model can also help document and communicate the support requirements, procedures and resources for the system's operation and maintenance. The system model can also help design and deliver effective training programs for the system's users and operators. How field support operations can be modeled using MBSE methods, how software design patterns can be used to suggest Pre Planned Product Improvement (P3I) opportunities, and how operational evaluation (OPEVAL) plans can be developed and cross-checked in a system modeling environment are less important aspects of system development methodologies that may not be relevant or applicable to the director of field support's concerns. References: OMG-Certified Systems Modeling Professional - Model Builder - Advanced (OCUP2-ADV) Examination Guide Version 1.0, Section 4.5

NEW QUESTION: 35

Choose the correct answer

Which feature needs to be added to the systems development environment to conduct a performance simulation?

A. numerical solver

B. object constraints

C. parametric diagrams

D. high-level architecture

Answer: (SHOW ANSWER)

Explanation

This feature needs to be added to the systems development environment to conduct a performance simulation because it enables users to solve mathematical equations and models that represent system performance. A numerical solver is a software tool that can perform numerical analysis and computation on a given problem or model. A numerical solver can help users to evaluate system performance by solving equations that describe system behavior, properties, constraints, etc. A numerical solver can also help users to optimize system performance by finding optimal solutions or trade-offs for a given problem or model. References:

<https://www.omg.org/ocsm/ocsm-adv-exam.htm><https://sysml.org/tutorials/sysml-diagram-tutorial/>

NEW QUESTION: 36

Choose the correct answer

What are two cross-cutting mechanisms within SysML that can be used to establish traceability between the systems model and a UML software model?

- A. packages and parametrics
- B. profiles and stereotypes
- C. allocations and stereotypes
- D. requirement relationships and allocations

Answer: (SHOW ANSWER)

Explanation

Two cross-cutting mechanisms within SysML that can be used to establish traceability between the systems model and a UML software model are allocations and stereotypes. Allocations are dependencies that indicate a relationship between elements in different models or domains. Stereotypes are extensions of existing metaclasses that add additional information or semantics to model elements. By using allocations and stereotypes, different aspects of the systems model and the software model can be linked and traced.

References: <https://www.omg.org/ocsm/ocsm-adv-exam.htm><https://www.omg.org/spec/SysML/1.6/PDF>

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