Change Summary Table

Version	Name	Date	Description
1.0.0	Hot Java	04/25/20	Updated class diagram
1.0.0	Lauren	04/25/20	Tasks and Subtasks
1.0.0	Cynthia	04/25/20	Findings
1.0.0	Fernie	04/25/20	Systems and Notification
1.0.0	Jesus	04/25/20	Report and User
1.0.0	Joaquin	04/25/20	Event
1.0.1	Hot Java	04/28/2020	Broke down requirements describing each relationship between classes

3.2. Behavioral Requirements

This section describes the behavioral requirements of the system. For complete requirements associated with the functionality given in Table 1 - Table 8, please refer to section 3.2.3 (Stimulus requirement section).

3.2.2. Related Real-World Objects

[SRS 1] The Event class shall have an association with System, where one event shall have one to many Systems.

[SRS 2] The Event class shall have an association with Lead analyst, where one to many events is created by one Lead analyst.

[SRS 3] The system shall store the attributes as defined in Table 1 for an event configuration.

Table 1 : Event

Attribute	**Data Type**	**Values and Constraints**	**Description**
Event Name	String	Required; Editable	Name of the event.
Event Description	String	Required; Editable;	Description of the event.
Event Start	String	Required; Editable; Must be in Zulu Time; Format: HH:MM MM/DD/YY AM/PM	Event's starting date
Event Type	Object	Required;{CPVA, AA, CVI}	Name of tests being performed by this event.
Security Classification	String	Required; Editable	Gives the event the security classification to build at desired scope.

Declassification Date	String	Required; Editable; Must be in Zulu Time; Format: HH:MM MM/DD/YY AM/PM	Start date and time of declassification.
Organization Name	String	Required; Editable	The organization name of whose event is for.
Customer Name	String	Required; Editable	The customer name of the event.
Assessment Date	String	Required; Editable; Must be in Zulu Time; Format: HH:MM MM/DD/YY AM/PM	Start date and time of the event.
Tested System	String	Required; Editable	System to be tested under event.
Version	String	Required; Editable	Keeps track of updates being changed in iterations, incrementally.

[SRS 4] The Findings class shall have an association with System, where one System shall have zero to many Findings.

[SRS 5] The Findings class shall have an association with Subtask, where one Subtask shall have zero to many Findings.

[SRS 6] The Findings class shall have an association with Task, where on Task shall have zero to many Findings.

[SRS 7] The Findings class shall have an association with User, where an User shall create zero to many Findings.

[SRS 8] The Findings class shall have a compositional relationship with Report, where a Report shall have one to many Findings.

[SRS 9] The system shall store the attributes as defined in Table 2 for Findings.

Table 2: Findings

Attribute	**Data Type**	**Values and Constraints**	**Description**
Finding Title	String	Required; Editable	Title of the finding
IP Port	String	Required; Editable	Specific Port for the IP
Host Name	String	Required; Editable	Name of the host
ID	Integer	Required; Editable	Finding's unique identifier
Analyst	String	Required; Editable	Finding's author initials
Status	Object	Required; {Open, Closed}	Finding's current status
Finding Type	Object	Required; {Credentials Complexity, Manufacturer Default Creds, Lack of Authentication, Plain Text Protocols, Plain Text Web-Login, Encryption, Authentication Bypass, Port Security, Access Control, Least Privilege, Privilege Escalation, Missing	List of available finding types

		Patches, Physical Security}	
Posture	Object	Required;{INSIDER, OUTSIDER, NEARSIDER}	Level of access used by analyst in order to attack the system
System Categorization (CIA)	Object	Required; {H, M, L}	Level of unauthorized access achieved, data alteration, and user access
IMP Score	Integer	Required; Editable	Impact Score description
CAT	String	Required; {I, II, III}; Derived; CIA Must be in system prior to generating CAT	Finding's severity
CAT Score	Integer	Required; {10, 7, 4}; Derived; CAT Must be in system prior to generating CAT Score	Finding's severity score based on CAT
Relevance	String	Required; {Confirmed, Expected, Anticipated, Predicted, Possible}; Pre-defined	Description of the relevance of a threat to the system
Likelihood	Integer	Required; {VH-6, H-5, M-4, L-3, VL-2}; Derived; Impact must be in	Finding's probability of affecting a system

		system prior to generating Likelihood	
Risk	Integer	Required; {VH-6, H-5, M-4, L-3, VL-2}; Derived; VS Score, Rraw, Impact, Countermeasure, Relevance of Threat, and Likelihood must be in system prior to generating Risk	Finding's probability of exposure
Impact	Integer	Required;{VH-10, H-7-9, M-4-6, L-1-3, VL-0}; Derived; System configuration must be in system prior to generating Impact	Impact of a vulnerability
Countermeasure	Integer	Required; {VH-6, H-5, M-4, L-3, VL-2}; Derived	Effectiveness of a countermeasure against a discovered vulnerability.
VS Score	Integer	Required;{VH-6, H-5, M-4, L-3, VL-2}; Derived; Sraw, Impact, Countermeasure, must be in system prior to generating VS Score	Vulnerability Severity
Mitigation	String	Required;Editable	Description of mitigation for vulnerability

Description	String	Required;Editable	Description of vulnerability.
Notes	String	Required; Editable	Additional information that the description field does not have.
Evidence	Object	Not Required; Editable	Any attachment the analyst would like to append to show evidence.
Collaborators	Object	Required; Editable	Analysts that have been assigned as collaborators to a specific finding.

[SRS 10] The Task class shall have an association with System, where one System shall have one to many Tasks.

[SRS 11] The Task class shall have an association with User, where the role Lead Analyst (one) shall create one to many Tasks.

[SRS 12] The Task class shall have an association with User, where the role Analyst (one) shall have one to many Tasks.

[SRS 13] The Task class shall have an association with User, where the role Collaborator (one) shall have one to many Tasks.

[SRS 14] The Task class shall have an association with Findings, where one Task shall have zero to many Findings.

[SRS 15] The Task class shall have an association with Notifications, where one Task shall have zero to many Notifications.

[SRS 16] The Task class shall have a compositional relationship with Subtask, where one Task shall have zero to many Subtasks.

[SRS 17] The system shall store the attributes as defined in Table 3 for a Task.

Table 3: Task

Attribute	Data Type	Values and Constraints	Description
Task Title	String	Required; Editable	Name of the task.
Task Description	String	Required; Editable;	Description of the task.
Priority	Object	Required; {High, Medium, Low}	The priority tells the user what is important to work on and if a notification should be sent out
Progress	Object	Required; {not-doable, not started, assigned, transferred, in-progress, complete}	The current status of the task.
Due Date	String	Required; Editable; Must be in Zulu Time; Format: HH:MM MM/DD/YY AM/PM	Due date and time of the current task.
Supporting Material	Object	Not Required; Editable	Any attachment the analyst would like to make to the finding, to show evidence.

[SRS 18] The Subtask class shall have an association with User, where one User creates one to many Subtasks

[SRS 19] The Subtask class shall have an association with Findings, where one Subtask shall have zero to many Findings.

[SRS 20] The Subtask class shall have an association with Notifications, where one Subtask shall have zero to many Notifications.

[SRS 21] The Subtask class shall have a compositional relationship with Task, where one Task shall have zero to many Subtasks.

[SRS 22] The system shall store the attributes as defined in Table 4 for a Subtask.

Table 4: Subtask

Attribute	**Data Type**	**Values and Constraints**	**Description**
Subtask Title	String	Required; Editable	Name of the subtask.
Subask Description	String	Required; Editable;.	Description of the subtask.
Progress	Object	Required; {not-doable, not started, assigned, transferred, in-progress, complete}	The current status of the subtask.
Due Date	String	Required; Editable; Must be in Zulu Time; Format: HH:MM MM/DD/YY AM/PM	Due date and time of the current subtask.
Supporting Material	Object	Not Required; Editable	Any attachment the analyst would like to make to the finding, to show evidence.

[SRS 23] The Reports class shall have an association with User, where the User (one) shall create zero to many Reports.

[SRS 24] The Reports class shall have a compositional relationship with Findings,where the Report shall have zero to many Findings.

[SRS 25] The Reports class shall have a compositional relationship with Event, where the Report shall have one Event.

[SRS 26] The Reports class shall have a compositional relationship with System, where the Report shall have one to many Systems.

[SRS 27] The system shall store the attributes as defined in Table 5 for a Report.

Table 5: Reports

Attribute	Data Type	Values and Constraints	Description
Report Template	Object	Required at least one; {RiskAssessment, ERB, Final Report}	The template that will be used depending on the Report Type that is entered by the User.
Report Type	Object	Required at least one; {RiskAssessment, ERB, Final Report}	Lead analysts will be able to select which kind of report will be generated.

[SRS 28] The User class shall have an association with Subtasks, where the role Lead Analyst/Analyst shall create zero to many Subtasks.

[SRS 29] The User class shall have an association with Notifications, where the role Analyst shall create zero to many Notifications.

[SRS 30] The User class shall have an association with Tasks, where the role Lead Analyst shall create one to many Tasks.

[SRS 31] The User class shall have an association with Findings, where the role Lead Analyst/Analyst shall create zero to many Findings.

[SRS 32] The User class shall have an association with Tasks, where the role Analyst shall have zero to many Tasks.

[SRS 33] The User class shall have an association with Tasks, where the role Collaborator shall have zero to many Tasks.

[SRS 34] The User class shall have an association with Event, where the role Lead Analyst shall create one to many Events.

[SRS 35] The User class shall have an association with Reports, where the User (one) shall create one to many Reports.

[SRS 36] The system shall store the attributes as defined in Table 6 for a User.

Table 6: User

Attribute	Data Type	Values and Constraints	Description
Initials	String	Required; Editable;	Lead analyst or analyst's initials for authentication purposes.
IP	String	Required; Editable;	Lead analyst or analyst's IP for authentication purposes.

[SRS 37] The System class shall have an association with the Event, where one Event shall have one to many Systems.

[SRS 38] The System class shall have an association with the Task, where one Task shall have one System.

[SRS 39] The System class shall have a compositional relationship with the Report, where one Report shall have one to many Systems

[SRS 40] The System class shall have an association with Findings, where one System shall have zero to many Findings.

[SRS 41] The system shall store the attributes as defined in Table 7 for a System.

Table 7: System

Attribute	Data Type	Values and Constraints	Description

System Name	String	Required; Editable	Name of the System
System Description	String	Required; Editable	Description of System
Confidentiality	Object	Required;{High, Medium, Low}	Level of unauthorized access achieved
Integrity	Object	Required;{High, Medium,Low}	Level of unauthorized data alteration
Availability	Object	Required;{High, Medium, Low}	Level of unauthorized user access
Locations	Object	Required; Editable	Location of System
Switches	String	Required; Editable	IP address of System
Routers	String	Required; Editable	IP address of System
Building/Room Accessed	String	Required; Editable	Location of where System is being accessed
Finding Classification	Object	Required; Editable	Type of classification for System

[SRS 42] The Notification class shall have an association with the Task class, where one Task shall have zero or more notifications

[SRS 43] The Notification class shall have an association with the User class, where one user shall have zero or more notifications

[SRS 44] The Notification class shall have an association with the Subtask class, where one Subtask shall have zero or more notifications

[SRS 45] The system shall store the attributes as defined in Table 8 for a Notification configuration

Table : 8 Notifications

Attribute	**Data Type**	**Values and Constraints**	**Description**
Frequency	String	Required; Editable;	Frequency of notification