Joint Emergency Trauma Simulation (JETS) System
Medical Modeling and Simulation (MMS)
Federation Object Model (FOM)

Version 2.0.0 Update

Released May 2022
Semantics Cleanup Released July 2024

Notes before reading:

- The MMS FOM is a data dictionary for use in the JETS High Level Architecture (HLA) Federation
  - This document is only the data dictionary and should not be considered an instruction manual
- The FOM covers data that is transferred between two or more systems
  - Any data specific to one system, stays in that system and is not part of the FOM
- In the "Datatype" column, there are references to __Array, __Enum, and __Record datatypes
  - These refer to separate tables with the same name
  - These Array, Enum, and Record tables contain the list of options for that attribute

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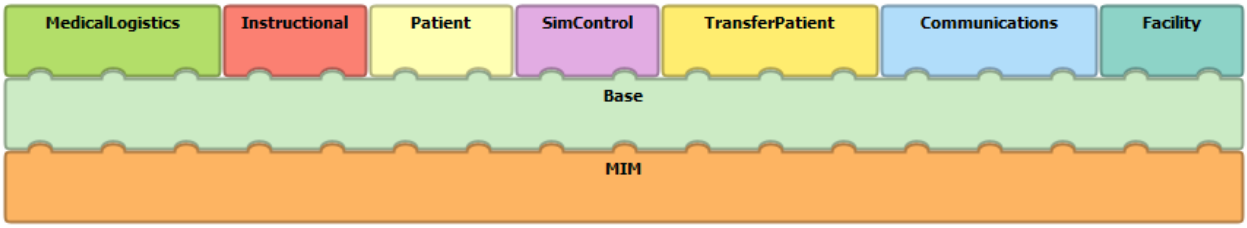
1.1. Modules overview

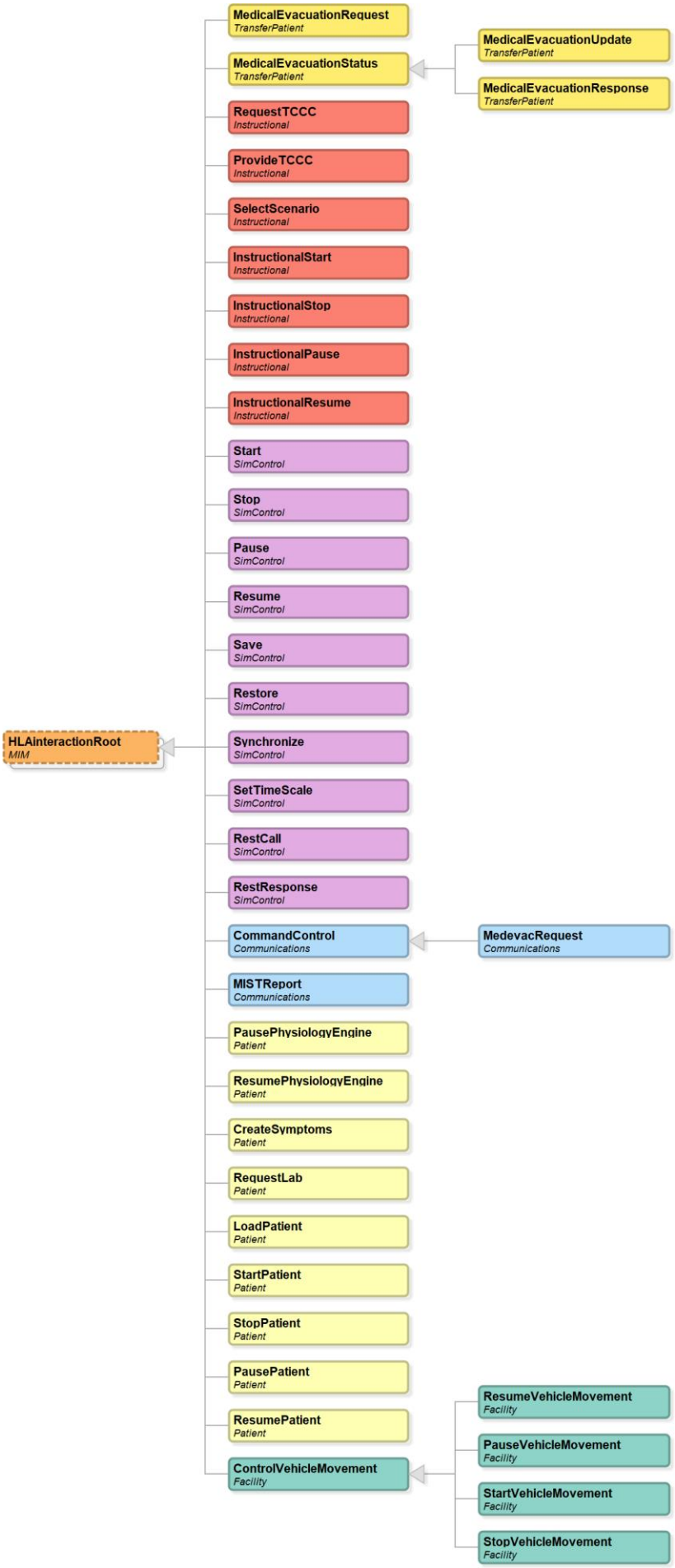


Module	Description
Patient	Patient module: all ground truth data related to the patient. Any data in this module will represent the true patient. Data can be from a physiology engine or instructor input. Multiple Patient instances may be created. Each Patient instance may have zero or more injuries and zero or more treatments. Patient, injuries and treatments are all associated by a unique patientId.
Instructional	The Instructional module will contain data about Instructor/Observer's actions during simulations plus data needed by a Learning Management System (LMS).
Facility	Used to describe the various facilities offering evacuation and enroute treatment to an injured patient. Reference Medical Operations Handbook which describes facility characteristics Also Army Techniques Publication No. 4-25.13 - Casualty Evacuation
TransferPatient	
MedicalLogistics	The MedicalLogistics module contains the representations related to all medical logistics. Representations of Logistics will differ by role level.
Base	Base module containing data that will be duplicated across modules.
Communications	The Communications module will contain models of patient documentation forms, radio communication, and command and control messages. Classes in the Communications module are "Perceived Truth" and are supplied/recorded by the trainee based on observations and treatments of the "Ground Truth" patient in the Patient module.

SimControl	The SimControl module will include data and commands monitoring the realtime status of a simulation (training exercise) and controlling that simulation. These functions are often referred to as the "white cell" component of a simulation system.

1.2. Object Classes Overview

1.3. Interaction Classes Overview



2. Patient

2.1. Identification

Name	Patient
Type	FOM
Version	3a
Modification Date	2020-03-13
Security Classification	Unclassified
Purpose	The Patient Module will be used to model patients, their injuries and the treatments administered to them.
Application Domain	Training
Description	Patient module: all ground truth data related to the patient. Any data in this module will represent the true patient. Data can be from a physiology engine or instructor input. Multiple Patient instances may be created. Each Patient instance may have zero or more injuries and zero or more treatments. Patient, injuries and treatments are all associated by a unique patientId.
Use Limitation	The Medical Modeling and Simulation Federation Object Model by Information Visualization and Innovative Research, Inc. is licensed under CC BY-ND 4.0. To view a copy of this license, visit https://creativecommons.org/licenses/by-nd/4.0/
Other	Resources: MedBiquitous; Medical Device Innovation Consortium (MDIC) ; SNOMED; Biogears; HUMMOD

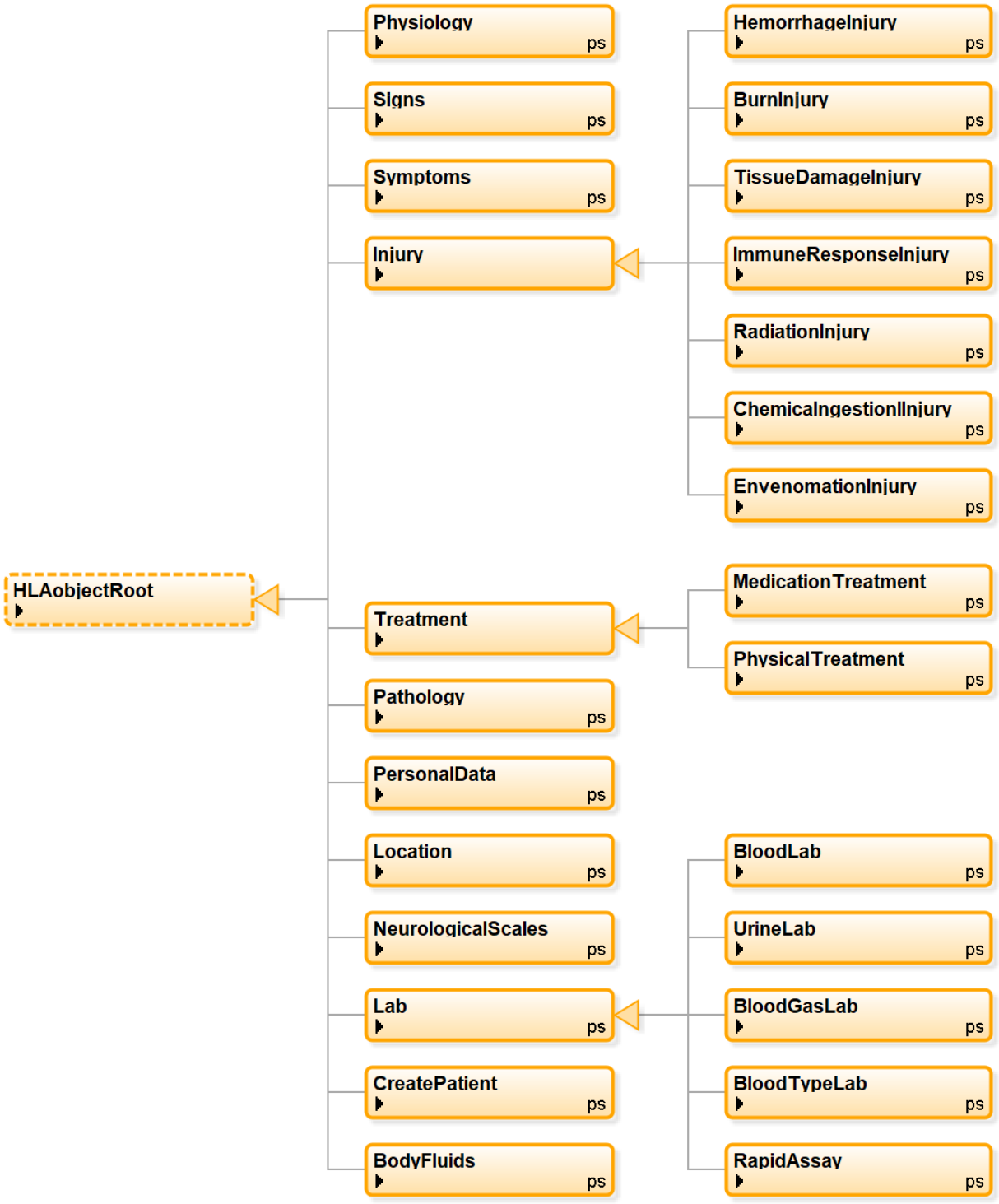
2.1.1. Technical POC Point of Contact

Name	
Organization	Information Visualization and Innovative Research Inc.
Telephone	
Email	jets@ivirinc.com

2.1.2. Dependencies

- Base

2.2. Object Classes



2.2.1. Physiology

HLAobjectRoot.Physiology

Physiology object: ground truth data provided by the physiology engine or equivalent simulator control software. Note that while these variables can be measured and reported by the learner, a different module (comms, instructional) is responsible for accounting for the measured values. Examples:

- heart rate
- respiration rate
- systolic and diastolic blood pressure

Attribute	Datatype	Semantics

patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
heartRate	Integer32BE	Beats per minute
diastolicBloodPressure	Integer32BE	mm HG expressed as an integer.
systolicBloodPressure	Integer32BE	mm HG expressed as an integer
peripheralOxygenSaturation	FloatType32BE	SPO2 Blood Oxygen Level expressed as real value .80 = 80%
temperatureFahrenheit	FloatType32BE	Temperature in degrees Fahrenheit.
respirationEndTidalCarbonDioxide	FloatType32BE	Expressed in mmHg.
respirationRate	FloatType32BE	Respiration rate expressed in number of breaths per minute.
lungTidalVolume	Integer32BE	Units mL.
lungDeadSpace	Integer32BE	Units mL.
lungTotalCapacity	Integer32BE	Units mL.
lungExpiratoryReserve	Integer32BE	Units mL.
lungInspiratoryReserve	Integer32BE	Units mL.
lungResidualVolume	Integer32BE	Units mL.

2.2.2. Signs

HLAobjectRoot.Signs

A sign is a physical response to an injury or condition. Signs can be noticed externally and can be observed or measured by a provider.

Note that some measurable signs are modeled in the Physiology class. A "Signs" monitor simulation would need to subscribe to both the Physiology and Signs classes

Attribute	**Datatype**	**Semantics**
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
signLocation	BodyAreaFineArray	May be null. Identifies where a sign is located on the body.
confusion	HLAboolean	Visible signs of confusion that the medic might observe or assess. True/1 = confusion, False/0 = no confusion.
skinColor	SkinColorEnum	Description of the skin complexion due to conditions or injuries. Does not describe the patient's base skin color, but identifies differences from the base color.
skinRash	SkinRashRecord	May be null. If rash exists, describes presentation of the rash.
skinMoisture	HLAboolean	Identifies if patient is sweating. True/1 = Sweating, False/0 = not sweating.

cough	CoughEnum	Describes type of cough.

2.2.3. Symptoms

HLAobjectRoot.Symptoms

Symptoms object: Perceived truth about breaks in the normal condition of the body. It is something a patient feels and reports to the provider. The symptom can be measured by a value as rated by the patient. “Worst stomach ache I have ever experienced.” “Pain is a 7 on a scale of 1-10.” For the patient module, these are created by the scenario, instructor, or physiology engine.
See Signs class for additional information

Attribute	**Datatype**	**Semantics**
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
symptomLocation	BodyAreaCoarseArray	May be null. Identifies where the patient is feeling the symptom.
dizziness	HLAboolean	Identifies if patient reports dizziness. True/1 = dizzy, False/0 = not dizzy.
nausea	HLAboolean	Identifies if patient reports nausea. True/1 = nausea, False/0 = no nausea.
levelOfPain	Integer32BE	Level of pain 0-10
fatigue	HLAboolean	Identifies if patient reports fatigue. True/1 = fatigue, False/0 = no fatigue.
numbness	HLAboolean	Identifies if patient reports numbness. True/1 = numbness, False/0 = no numbness.
visionDisturbance	VisionDisturbanceEnum	May be null. If patient experiences issues with their vision, they describe the type of vision they are experiencing to the provider. This only describes differences to normal, baseline vision of the patient.

2.2.4. Injury

HLAobjectRoot.Injury

The operational name of the patient’s injury, along with information describing the severity and effect of the injury on the patient. The effect can be used to adjust the physiology engine model of the patient.

The injurySeverity scale will be translated by the physiology engine into its own variables. Some injuries will require more than a simple severity scale, and those effects are captured in subclasses.

Attribute	**Datatype**	**Semantics**
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId.
injuryId	HLAASCIIstring	Used to identify a particular injury and related physiological insult.

time	HLAinteger64Time	This optional attribute indicates the time of injury in simulation elapsed time. If null, the injury time is current time.
injuryLocation	BodyAreaFineArray	Enumerations of the body locations an injury could occur
injuryType	InjuryTypeEnum	Represents an injury inflicted on a patient using operational or descriptive language.
injuryDescription	HLAASCIIstring	May be null. A plain text physical description of the injury to provide additional context if needed.
injurySeverity	Integer32BE	Scale 0 to 10 of injury severity, with 1 being minimal severity and 10 being maximum severity. 0 is used for effects that are fully described by a subclass instead.

2.2.5. HemorrhageInjury

HLAobjectRoot.Injury.HemorrhageInjury

Sets the hemorrhage rate. Does not require an additional severity score.

Attribute	**Datatype**	**Semantics**
hemorrhageRate	FloatType32BE	The rate of hemorrhage measured in mL per minute
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId.
injuryId	HLAASCIIstring	Used to identify a particular injury and related physiological insult.
time	HLAinteger64Time	This optional attribute indicates the time of injury in simulation elapsed time. If null, the injury time is current time.
injuryLocation	BodyAreaFineArray	Enumerations of the body locations an injury could occur
injuryType	InjuryTypeEnum	Represents an injury inflicted on a patient using operational or descriptive language.
injuryDescription	HLAASCIIstring	May be null. A plain text physical description of the injury to provide additional context if needed.
injurySeverity	Integer32BE	Scale 0 to 10 of injury severity, with 1 being minimal severity and 10 being maximum severity. 0 is used for effects that are fully described by a subclass instead.

2.2.6. BurnInjury

HLAobjectRoot.Injury.BurnInjury

Describes the parameters of a burn injury. Does not require an additional severity score.

Attribute	**Datatype**	**Semantics**
totalBodySurfaceArea	FloatType32BE	The percentage of body area covered by the burn, expressed as a decimal (0.25 = 25% TBSA)
burnType	BurnTypeEnum	Describes the type of burn.

burnDegree	BurnDegreeEnum	Describes the degree of the burn
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId.
injuryId	HLAASCIIstring	Used to identify a particular injury and related physiological insult.
time	HLAinteger64Time	This optional attribute indicates the time of injury in simulation elapsed time. If null, the injury time is current time.
injuryLocation	BodyAreaFineArray	Enumerations of the body locations an injury could occur
injuryType	InjuryTypeEnum	Represents an injury inflicted on a patient using operational or descriptive language.
injuryDescription	HLAASCIIstring	May be null. A plain text physical description of the injury to provide additional context if needed.
injurySeverity	Integer32BE	Scale 0 to 10 of injury severity, with 1 being minimal severity and 10 being maximum severity. 0 is used for effects that are fully described by a subclass instead.

2.2.7. TissueDamageInjury

HLAobjectRoot.Injury.TissueDamageInjury

Describes the type of issue damaged in a soft tissue injury. Requires an additional severity score.

Attribute	**Datatype**	**Semantics**
tissueType	TissueTypeEnum	The type of tissue that is damaged.
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId.
injuryId	HLAASCIIstring	Used to identify a particular injury and related physiological insult.
time	HLAinteger64Time	This optional attribute indicates the time of injury in simulation elapsed time. If null, the injury time is current time.
injuryLocation	BodyAreaFineArray	Enumerations of the body locations an injury could occur
injuryType	InjuryTypeEnum	Represents an injury inflicted on a patient using operational or descriptive language.
injuryDescription	HLAASCIIstring	May be null. A plain text physical description of the injury to provide additional context if needed.
injurySeverity	Integer32BE	Scale 0 to 10 of injury severity, with 1 being minimal severity and 10 being maximum severity. 0 is used for effects that are fully described by a subclass instead.

2.2.8. ImmuneResponseInjury

HLAobjectRoot.Injury.ImmuneResponseInjury

This class identifies the general type of immune response to model. Ideally, a specific disease will be selected from InjuryType to allow the engine to model that specific disease. However if that model is not available, this class can be used to indicate a generic

type of immune response.

Attribute	Datatype	Semantics
immuneTrigger	ImmuneTriggerEnum	Type of immune response.
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId.
injuryId	HLAASCIIstring	Used to identify a particular injury and related physiological insult.
time	HLAinteger64Time	This optional attribute indicates the time of injury in simulation elapsed time. If null, the injury time is current time.
injuryLocation	BodyAreaFineArray	Enumerations of the body locations an injury could occur
injuryType	InjuryTypeEnum	Represents an injury inflicted on a patient using operational or descriptive language.
injuryDescription	HLAASCIIstring	May be null. A plain text physical description of the injury to provide additional context if needed.
injurySeverity	Integer32BE	Scale 0 to 10 of injury severity, with 1 being minimal severity and 10 being maximum severity. 0 is used for effects that are fully described by a subclass instead.

2.2.9. RadiationInjury

HLAobjectRoot.Injury.RadiationInjury

Describes the radiation dose. Requires an additional severity score.

Attribute	Datatype	Semantics
exposureTime	Integer32BE	The time of exposure to the radiation, expressed in seconds.
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId.
injuryId	HLAASCIIstring	Used to identify a particular injury and related physiological insult.
time	HLAinteger64Time	This optional attribute indicates the time of injury in simulation elapsed time. If null, the injury time is current time.
injuryLocation	BodyAreaFineArray	Enumerations of the body locations an injury could occur
injuryType	InjuryTypeEnum	Represents an injury inflicted on a patient using operational or descriptive language.
injuryDescription	HLAASCIIstring	May be null. A plain text physical description of the injury to provide additional context if needed.
injurySeverity	Integer32BE	Scale 0 to 10 of injury severity, with 1 being minimal severity and 10 being maximum severity. 0 is used for effects that are fully described by a subclass instead.

2.2.10. ChemicaIngestionlInjury

HLAobjectRoot.Injury.ChemicaIngestionlInjury

Describes a chemical or poison ingestion. Does not require an additional severity score.

Attribute	Datatype	Semantics
chemicalPH	FloatType32BE	pH of the chemical (used instead of identifying the specific chemical to allow for more general reactions).
chemicalExposure	HLAboolean	Identifies if the exposure was external (surface contact) or internal (injected or ingested). 0 = external, 1 = internal
chemicalDosage	FloatType32BE	Dosage of the chemical, expressed in mL or mg
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId.
injuryId	HLAASCIIstring	Used to identify a particular injury and related physiological insult.
time	HLAinteger64Time	This optional attribute indicates the time of injury in simulation elapsed time. If null, the injury time is current time.
injuryLocation	BodyAreaFineArray	Enumerations of the body locations an injury could occur
injuryType	InjuryTypeEnum	Represents an injury inflicted on a patient using operational or descriptive language.
injuryDescription	HLAASCIIstring	May be null. A plain text physical description of the injury to provide additional context if needed.
injurySeverity	Integer32BE	Scale 0 to 10 of injury severity, with 1 being minimal severity and 10 being maximum severity. 0 is used for effects that are fully described by a subclass instead.

2.2.11. EnvenomationInjury

HLAobjectRoot.Injury.EnvenomationInjury

Describes the venom dose. Does not require an additional severity score.

Attribute	Datatype	Semantics
venomType	VenomTypeEnum	The classification of the venom type. The type affects the body's response to the venom.
venomDose	FloatType32BE	Amount of venom measured in mL or mg.
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId.
injuryId	HLAASCIIstring	Used to identify a particular injury and related physiological insult.
time	HLAinteger64Time	This optional attribute indicates the time of injury in simulation elapsed time. If null, the injury time is current time.
injuryLocation	BodyAreaFineArray	Enumerations of the body locations an injury could occur
injuryType	InjuryTypeEnum	Represents an injury inflicted on a patient using operational or descriptive language.
injuryDescription	HLAASCIIstring	May be null. A plain text physical description of the injury to provide additional context if needed.

injurySeverity	Integer32BE	Scale 0 to 10 of injury severity, with 1 being minimal severity and 10 being maximum severity. 0 is used for effects that are fully described by a subclass instead.

2.2.12. Treatment

HLAobjectRoot.Treatment

This class is not meant to be published or subscribed. Rather use the subclasses of MedicationTreatmentl and PhysicalTreatment.

The procedure performed by the medical provider that impacts the patient's physiology.

Each Treatment Instance will have a unique treatmentId. Once a treatmentId is used, it cannot be reused during an execution.

Attribute	**Datatype**	**Semantics**
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
injuryId	HLAASCIIstring	May be null. Associates a treatment with a unique injury or symptom. If null, indicates that the treatment is not associated with a specific injury... for example, a treatment (oxygen administered to a patient at high altitude) may not be associated with a specific injury.
treatmentId	HLAASCIIstring	The treatmentId is a unique value which associates a treatment to an injury and a patient. Once a treatmentId is created, it cannot be reused during an execution. Naming Convention: Treatment_uniquevalue
treatmentLocation	BodyAreaCoarseArray	May be null. Used to specify what part of the body a treatment is applied to IF a treatment is applied to a specific body location.
treatmentTime	HLAinteger64Time	This attribute indicates the time of the treatment in simulation elapsed time.

2.2.13. MedicationTreatment

HLAobjectRoot.Treatment.MedicationTreatment

This class covers items that are given in measured dosages including drugs, fluids and other medications.

Attribute	**Datatype**	**Semantics**
medicationName	HLAASCIIstring	Specific name of the medication, if needed. May be null.
administrationRoute	MedicationAdministrationRouteEnum	Route by which the medication is administered.

dosageValue	FloatType32BE	Amount of medication administered. The base units are mL or mg depending on the medication.
dosageTimePeriod	Integer32BE	The time period over which the medication is administered. If the value is 0, the medication is administered as a bolus. The base time period is minutes.
dosageActive	HLAboolean	Indicates if a medication administration (e.g. drip) is active. True/1 = active, or False/0 = stopped. If active, the rate calculations continue until the attribute changes to 0. Bolus dosages will be 0.
analgesics	HLAboolean	Is the medication type an analgesic?
sedation	HLAboolean	Is the medication type a sedative?
paralytics	HLAboolean	Is the medication a paralytic?
pressers	HLAboolean	Is the medication type a vasopresser?
overdoseTreatment	HLAboolean	Is the treatment an overdoseTreatment?
antiEmetics	HLAboolean	Is the medication type an anti emetic?
anaphylaxisTreatment	HLAboolean	Is the medication type an anaphylaxis?
respiratoryTreatment	HLAboolean	Is the medication type a respiratory treatment?
hypoglycemiaTreatment	HLAboolean	Is the medication type a hypoglycemiaTreatment?
cbrneTreatment	HLAboolean	Is the medication type a CBRNE treatment?
seizureTreatment	HLAboolean	Is the medication type a seizure treatment?
bloodProducts	HLAboolean	Is the medication type a blood product?
nutrition	HLAboolean	Is the medication type a nutrition product?
infectionMedication	InfectionFunctionEnum	Is the medication type for infection? If yes, select an enumeration.
clottingMedication	ClottingFunctionEnum	Is the medication type for clotting? If yes, select an enumeration.
cardiacMedication	CardiacFunctionEnum	Is the medication type for cardiac? If yes, select an enumeration.
fluidMedication	FluidFunctionEnum	Is the medication type a fluid medication? If yes, select an enumeration.
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
injuryId	HLAASCIIstring	May be null. Associates a treatment with a unique injury or symptom. If null, indicates that the treatment is not associated with a specific injury... for example, a treatment (oxygen administered to a patient at high altitude) may not be associated with a specific injury.

treatmentId	HLAASCIIstring	The treatmentId is a unique value which associates a treatment to an injury and a patient. Once a treatmentId is created, it cannot be reused during an execution. Naming Convention: Treatment_uniquevalue
treatmentLocation	BodyAreaCoarseArray	May be null. Used to specify what part of the body a treatment is applied to IF a treatment is applied to a specific body location.
treatmentTime	HLAinteger64Time	This attribute indicates the time of the treatment in simulation elapsed time.

2.2.14. PhysicalTreatment

HLAobjectRoot.Treatment.PhysicalTreatment

This class covers treatments that are physically performed on the patient and may use devices or other equipment to perform the treatment.

Attribute	**Datatype**	**Semantics**
treatment	PhysicalTreatmentTypeEnum	Enumeration of the types of physical treatment administered to a patient.
deviceUsed	TreatmentDeviceEnum	What device was used to administer the treatment
treatmentActive	HLAboolean	Used to identify whether the treatment is active or inactive. True/1 = Active, False/0 = inactive
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
injuryId	HLAASCIIstring	May be null. Associates a treatment with a unique injury or symptom. If null, indicates that the treatment is not associated with a specific injury... for example, a treatment (oxygen administered to a patient at high altitude) may not be associated with a specific injury.
treatmentId	HLAASCIIstring	The treatmentId is a unique value which associates a treatment to an injury and a patient. Once a treatmentId is created, it cannot be reused during an execution. Naming Convention: Treatment_uniquevalue
treatmentLocation	BodyAreaCoarseArray	May be null. Used to specify what part of the body a treatment is applied to IF a treatment is applied to a specific body location.
treatmentTime	HLAinteger64Time	This attribute indicates the time of the treatment in simulation elapsed time.

2.2.15. Pathology

HLAobjectRoot.Pathology

Pathology object: Chronic conditions that are affecting the patient. Examples

- Diabetes type 1 and 2
- Hypertension (chronic)

Attribute	Datatype	Semantics
patientId	HLAASCIIstring	patientId associates a particular patient to a particular pathology. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.

2.2.16. PersonalData

HLAobjectRoot.PersonalData

Personal data object: Base characteristics/demographics of the patient. Examples

- age
- weight
- height

Attribute	Datatype	Semantics
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
firstName	HLAASCIIstring	First name of patient.
lastName	HLAASCIIstring	Last name of patient.
gender	GenderEnum	Gender of patient.
dateOfBirth	DateOfBirthRecord	Date of Birth of the patient.
weight	FloatType32BE	Weight of the patient in pounds.
height	Integer32BE	Height of patient in inches.

2.2.17. Location

HLAobjectRoot.Location

Used to represent the physical location of the patient.

Attribute	Datatype	Semantics
patientId	HLAASCIIstring	Associates a particular patient with a particular physical location.
location	PhysicalLocationRecord	Representation as Latitude, Longitude, Altitude

facilityId	HLAASCIIstring	Allows a patient to be associated with a facility (fixed or mobile). At that time, patient location would not be modeled, but facility ID could be used. Null means patient is not associated with a facility.

2.2.18. NeurologicalScales

HLAobjectRoot.NeurologicalScales

Neurological scales are tools used by providers to measure certain aspects or responses of a patient. The measure of the scales relies on how the patient presents or describes signs and symptoms.

Attribute	Datatype	Semantics
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
glasgowComaScale	GlasgowComaScaleRecord	GCS is a total of the scores for EyeOpeningResponse + BestVerbalResponse + BestMotorResponse.
levelOfResponse	LevelOfResponseEnum	AVPU Assessment.
levelOfConsciousness	LevelOfConsciousnessEnum	General description of the patient's neurological state.

2.2.19. Lab

HLAobjectRoot.Lab

Represents lab values that can be measured from the patient. Includes blood analysis, urinalysis, blood gas analysis, and blood type analysis.

Attribute	Datatype	Semantics
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
time	HLAinteger64Time	Simulation time that the lab was taken.

2.2.20. BloodLab

HLAobjectRoot.Lab.BloodLab

Blood Lab test. Some attributes may be null depending on the test administered.

Attribute	Datatype	Semantics
bloodSodium	FloatType32BE	Measured in mmol/L.

potassium	FloatType32BE	Measured in mmol/L.
bloodChloride	FloatType32BE	Measured in mEq/L.
lactate	FloatType32BE	Measured in mmol/L.
bloodKetones	FloatType32BE	Measured in mmol/L.
fattyAcids	FloatType32BE	Measured in mmol/L.
triglycerides	FloatType32BE	Measured in mg/dL.
bloodCreatinine	FloatType32BE	Measured in mg/dL.
bloodUreaNitrogen	FloatType32BE	Measured in mg/dL.
bloodPhosphate	FloatType32BE	Measured in mg/dL.
ionizedCalcium	FloatType32BE	Measured in mmol/L.
bloodGlucose	FloatType32BE	Measured in mg/dL.
hematocrit	FloatType32BE	Measured as a % from 0 to 100. Express as decimal.
hemoglobin	FloatType32BE	Measured in g/dL.
bloodPh	FloatType32BE	Unitless
bloodBicarbonate	FloatType32BE	Measured in mmol/L.
baseExcess	FloatType32BE	Measured in mmol/L.
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
time	HLAinteger64Time	Simulation time that the lab was taken.

2.2.21. UrineLab

HLAobjectRoot.Lab.UrineLab

Attributes and measured values measured by a urine test. Attributes may be null depending on the particular tests administered.

The datatypes and values associated with each attribute are what would be determined if a full urine lab test was performed. For simulators using any type of strip, a mapping would need to be performed from what the lab values are, to the values the strip would return.

Attribute	**Datatype**	**Semantics**
urobilinogen	FloatType32BE	Measured in umol/L.
urineGlucose	FloatType32BE	Measured in mmol/L.
bilirubin	FloatType32BE	Measured in mg/dL.
urineKetones	FloatType32BE	Measured in mmol/L.
specificGravity	FloatType32BE	Unitless.
bloodInUrine	Integer32BE	measured in RBC/uL (Red Blood cells per micro liter)
hemolysis	HLAboolean	Related to reading bloodInUrine; True - blood cells are hemolyzed (damaged); False - blood cells are whole (undamaged)

urinePh	FloatType32BE	Unitless.
protein	FloatType32BE	Measured in g/L.
nitrite	FloatType32BE	Measured in mg/dL
leukocytes	Integer32BE	measured in WBC/uL (White Blood cells per micro liter).
ascorbicAcid	FloatType32BE	Measured in mmol/L.
urineSodium	FloatType32BE	Measured in mEq/L.
urineChloride	FloatType32BE	Measured in mEq/L.
urineCreatinine	FloatType32BE	Measured in mg/dL.
urineBicarbonate	FloatType32BE	Measured in mEq/L.
ammonia	FloatType32BE	Measured in mcg/dL.
urinePhosphate	FloatType32BE	Measured in mg/dL.
urineUreaNitrogen	FloatType32BE	Measured in grams per 24 hours.
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
time	HLAinteger64Time	Simulation time that the lab was taken.

2.2.22. BloodGasLab

HLAobjectRoot.Lab.BloodGasLab

Parameters and measured values measured by a blood gas lab. Some values may be null, as different tests focus on a different subset of these attributes.

Attribute	**Datatype**	**Semantics**
partialPressureCarbonDioxide	FloatType32BE	Measured in mmHg.
partialPressureOxygen	FloatType32BE	Measured in mmHg.
totalOxygenSaturation	FloatType32BE	Measured as a % from 0 to 100. Express as decimal.
totalCarbonDioxide	FloatType32BE	Measured in mmol/L.
sulfurDioxide	FloatType32BE	Measured as a % from 0 to 100. Express as decimal.
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
time	HLAinteger64Time	Simulation time that the lab was taken.

2.2.23. BloodTypeLab

HLAobjectRoot.Lab.BloodTypeLab

Results of running the blood lab test. Default state is unknown.

Attribute	Datatype	Semantics
bloodType	BloodTypeEnum	Blood Type of the patient
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
time	HLAinteger64Time	Simulation time that the lab was taken.

2.2.24. RapidAssay

HLAobjectRoot.Lab.RapidAssay

Rapid Assay labs may be used to quickly identify a number of virus/bacterial infections including: Flu, Strep, HIV, COVID, H1N1, Malaria.

Attribute	Datatype	Semantics
testName	HLAASCIIstring	Name of the rapid assay being administered.
result	HLAASCIIstring	Result of the rapid assay test administered.
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
time	HLAinteger64Time	Simulation time that the lab was taken.

2.2.25. CreatePatient

HLAobjectRoot.CreatePatient

If multiple federates are interested in multiple patients, this object is an approach to telling which federates should model/observe a particular patient.

Attribute	Datatype	Semantics
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
target	HLAASCIIstring	Federate name(s) of the target(s) of this interaction. Multiple federate names separated by commas.

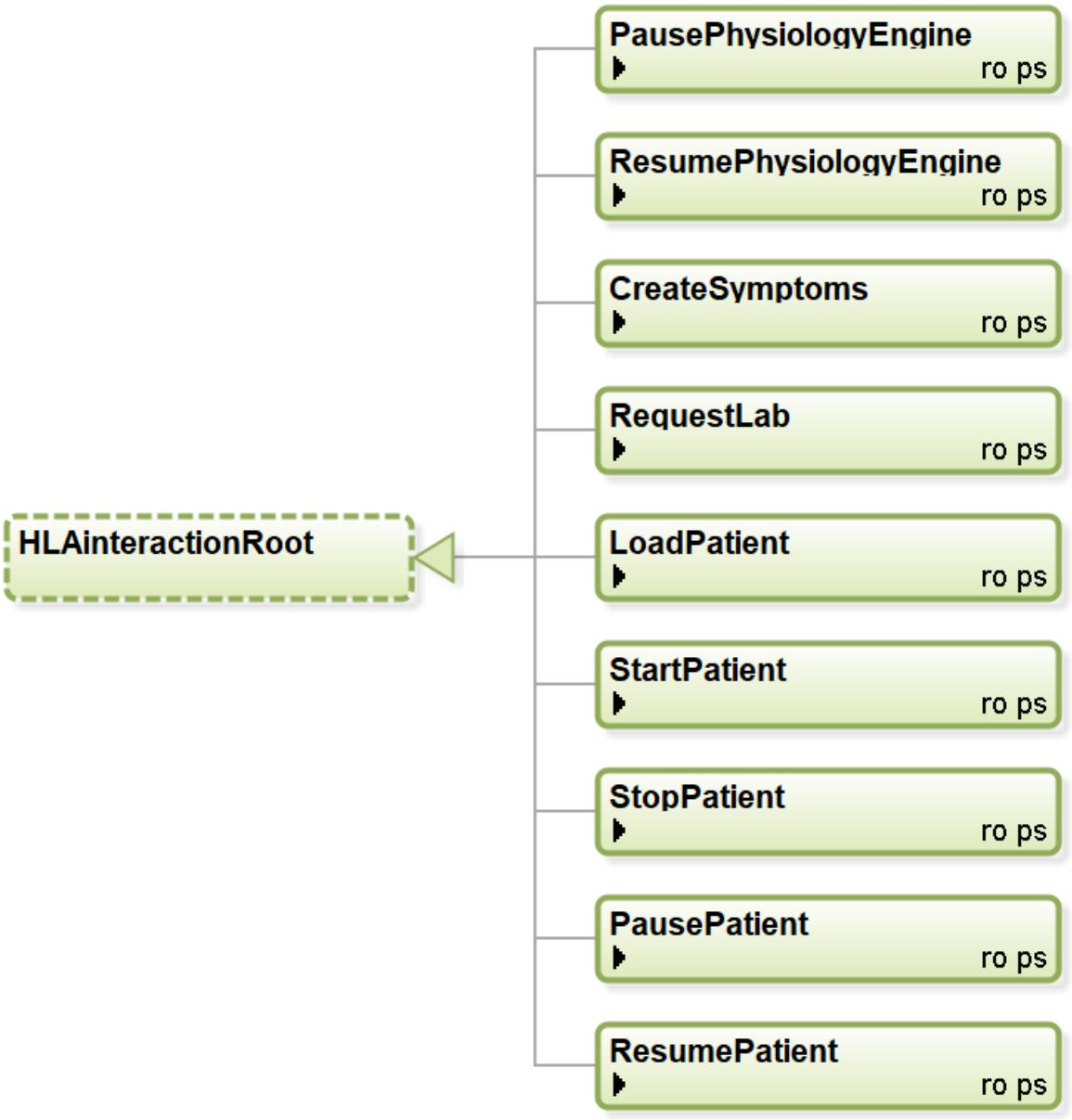
2.2.26. BodyFluids

HLAobjectRoot.BodyFluids

The body fluids object is the ground truth data regarding various levels of body fluids of the patient. These are quantifiable measures, rather than observations as in the case of signs and symptoms.

Attribute	Datatype	Semantics
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
bloodVolume	FloatType32BE	The current blood volume of the patient, in mL. Is affected by active hemorrhage (loss) and fluid resuscitation (gain). May be null if this quantity is not modeled.
bloodLossRate	FloatType32BE	The rate of blood loss in mL/min. While the hemorrhageRate attribute in the HemorrhageInjury class defines the initial injury attribute, this bloodLossRate attribute is reported in real time and reacts to treatments. May be null if this quantity is not modeled or is not part of the scenario.
urineOutputRate	FloatType32BE	The rate of urine production, in mL/min. May be null if this quantity is not modeled.
sweatRate	FloatType32BE	Amount of fluid lost as sweat, in mL. May be null if this quantity is not modeled.

2.3. Interaction Classes



2.3.1. PausePhysiologyEngine

HLAinteractionRoot.PausePhysiologyEngine

Used to tell the physiology engine to pause patient modeling for the specific patient patientId

Parameter	Datatype	Semantics
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution. Unique string ID representing the patient. Links patient with injury, treatment, transportation

2.3.2. ResumePhysiologyEngine

HLAinteractionRoot.ResumePhysiologyEngine

Used to tell the physiology engine to resume modeling the patient identified by patientId. If patient is not paused, this interaction will be ignored.

Parameter	Datatype	Semantics
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution. Unique string ID representing the patient. Links patient with injury, treatment, transportation

2.3.3. CreateSymptoms

HLAinteractionRoot.CreateSymptoms

Interaction to tell the PatientSimulator to create a Symptoms object. These parameters represent the initial conditions of the patient that are outwardly visible or measurable by the trainee.

The PatientSimulator needs to create the Symptoms object in order to update it.

Parameter	Datatype	Semantics
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
levelOfConsciousnessGlasgowComaScale	GlasgowComaScaleRecord	Level Of Consciousness is a total of the scores for EyeOpeningResponse + BestVerbalResponse + BestMotorResponse.
levelOfPain	Integer32BE	Level of pain 0-10.
levelOfConsciousnessAvpu	LevelOfConsciousnessEnum	AVPU scale.
bleeding	HLAASCIIstring	Level of bleeding.
respiratoryDistress	HLAASCIIstring	SMOG breaths per minute <8 or >30.
torsoInjury	HLAASCIIstring	Torso or Chest injury impacting breathing.
confusion	HLAASCIIstring	Visible signs of confusion that the medic might observe or assess.
eye	HLAASCIIstring	Unequal dilated pupils, erratic eye movement.

2.3.4. RequestLab

HLAinteractionRoot.RequestLab

This interaction could be viewed as a hospital order to perform a lab. If subscribing federate is not modeling some aspect of

patientId, ignore this interaction.

Parameter	Datatype	Semantics
patientId	HLAASCIIstring	patientId identifies a particular patient. patientId must be unique within an execution. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
labType	HLAASCIIstring	Type of lab being requested

2.3.5. LoadPatient

HLAinteractionRoot.LoadPatient
Interaction to tell the physiology engine to load a patient associated with patientId

Parameter	Datatype	Semantics
patientId	HLAASCIIstring	patientId associates a particular patient to a particular injuryId. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution. Unique string ID representing the patient. Links patient with injury, treatment, transportation

2.3.6. StartPatient

HLAinteractionRoot.StartPatient
Interaction to start modeling the patient state. If simulationElapsedTime is null, the start is immediate.

Parameter	Datatype	Semantics
simulationElapsedTime	HLAinteger64Time	Simulation Elapsed time to begin patient modeling
patientId	HLAASCIIstring	Identifies which patient to start modeling.

2.3.7. StopPatient

HLAinteractionRoot.StopPatient
Interaction to stop modeling the patient state. If simulationElapsedTime is null, the start is immediate.

Parameter	Datatype	Semantics

simulationElapsedTime	HLAinteger64Time	Simulation Elapsed time to stop patient modeling. This is an indication that the patient modeling will stop for the duration of the execution. Different from PausePatient.
patientId	HLAASCIIstring	Identifies which patient to stop modeling.

2.3.8. PausePatient

HLAinteractionRoot.PausePatient
Notification to pause (temporarily) modeling a patient. If simulationElapsedTime is null, the pause is immediate.

Parameter	Datatype	Semantics
simulationElapsedTime	HLAinteger64Time	Simulation Elapsed time to pause patient modeling. If null, pause is immediate.
patientId	HLAASCIIstring	Identifies which patient to pause modeling.

2.3.9. ResumePatient

HLAinteractionRoot.ResumePatient
Notification to resume modeling a paused patient. If simulationElapsedTime is null, the resume is immediate.

Parameter	Datatype	Semantics
simulationElapsedTime	HLAinteger64Time	Simulation Elapsed time to resume patient modeling. If null, pause is immediate.
patientId	HLAASCIIstring	Identifies which patient to resume modeling.

2.4. Datatypes

2.4.1. Enumerated Datatypes

2.4.1.1. InjuryTypeEnum

Each InjuryType will have a location and effect associated with it.

Representation: HLAinteger32BE

Enumerator	Value
notApplicable	0
hemorrhage	1
jointDislocation	2
compromisedAirway	3
fracture	4

traumaticBrainInjury	5
laceration	6
pneumothorax	7
tensionPneumothorax	8
hemothorax	9
burn	10
compartmentPressure	11

2.4.1.2. LevelOfConsciousnessEnum

Observed level of patient consciousness.

Representation: HLAinteger32BE

Enumerator	Value
normal	0
confused	1
impaired	2
comotose	3
convulsing	4
notBreathing	5
nearDeath	6
dead	7

2.4.1.3. MedicationAdministrationRouteEnum

Administration routes for administering medication.

Representation: HLAinteger32BE

Enumerator	Value
unknown	0
intravenousDrip	1
intravenousBolus	2
intramuscular	3
intraosseousDrip	4
intraosseousBolus	5
oral	6
rectal	7
sublingual	8
buccal	9

intradermal	10

2.4.1.4. PhysicalTreatmentTypeEnum

Types of physical treatments that can be administered to a patient.

Representation: HLAinteger32BE

Enumerator	Value
openNasalAirway	0
openTrachealAirway	1
stopHemorrhage	2
releaseIntrapleuralPressure	3
stabilizeOrthopedicFracture	4
immobilizeSpine	5
cleanWound	6
elevateHead	7
sealChestWound	8
warmPatient	9
catheterize	10
ventilationManual	11
chestCompression	12
defibrillate	13
ventilationHyper	14
ventilationPEEP5	15
ventilationPEEP15	16
bandageBurn	17
releaseCompartmentalPressure	18
releaseSkinPressure	19
coverEye	20

2.4.1.5. SkinColorEnum

Description of skin color based on conditions or injuries. This is not the patient's base skin tone, but identifies differences from the base tone.

Representation: HLAinteger32BE

Enumerator	Value
normal	0
pallor	1

flush	2
cyanotic	3

2.4.1.6. CoughEnum

Description of the type of cough.

Representation: HLAinteger32BE

Enumerator	Value
n_a	0
dry	1
wetWithPhlegm	2
wetWithBlood	3
wetWithoutPhelgm	4
coughWithWheeze	5
paroxysmalCough	6
barkingCough	7
whoopingCough	8
choking	9

2.4.1.7. VisionDisturbanceEnum

Description of the type of vision anomaly.

Representation: HLAinteger32BE

Enumerator	Value
distanceBlurred	0
nearBlurred	1
diplopiaVertical	2
diplopiaHorizontal	3
halos	4
blindnessPartial	5
blindnessTotal	6
tunnelVision	7

2.4.1.8. BurnTypeEnum

Types of burns.

Representation: HLAinteger32BE

Enumerator	Value
notApplicable	0
thermal	1
chemical	2
electrical	3

2.4.1.9. BurnDegreeEnum

Degrees of burn.

Representation: HLAinteger32BE

Enumerator	Value
notApplicable	0
firstDegree	1
secondDegree	2
thirdDegree	3

2.4.1.10. TissueTypeEnum

Types of tissue that might be injured.

Representation: HLAinteger32BE

Enumerator	Value
notApplicable	0
muscle	1
skin	2
tendon	3
ligament	4
organ	5
fat	6
cartilage	7

2.4.1.11. ImmuneTriggerEnum

Types of immunological triggers.

Representation: HLAinteger32BE

Enumerator	Value
notApplicable	0

viral	1
bacterial	2
parasitic	3
airwayAllergen	4
inflammatory	5

2.4.1.12. VenomTypeEnum

Types of venom.

Representation: HLAinteger32BE

Enumerator	Value
notApplicable	0
cytotoxin	1
neurotoxin	2
hemotoxin	3

2.4.1.13. LevelOfResponseEnum

AVPU is a scale used to quickly identify the responsiveness of a patient to various stimuli.

Alert: The patient is fully awake (although not necessarily oriented). This patient will have spontaneously open eyes, will respond to voice (although may be confused) and will have bodily motor function.

Verbal: The patient makes some kind of response when you talk to them, which could be in any of the three component measures of eyes, voice or motor - e.g. patient's eyes open on being asked "Are you OK?". The response could be as little as a grunt, moan, or slight move of a limb when prompted by the voice of the rescuer.

Pain: The patient makes a response on any of the three component measures on the application of pain stimulus, such as a central pain stimulus like a sternal rub or a peripheral stimulus such as squeezing the fingers. A patient with some level of consciousness (a fully conscious patient would not require a pain stimulus) may respond by using their voice, moving their eyes, or moving part of their body (including abnormal posturing).

Unresponsive: Sometimes noted as 'Unconscious'.

Representation: HLAinteger32BE

Enumerator	Value
alert	0
verbal	1
pain	2
unresponsive	3

2.4.2. Fixed Record Datatypes

2.4.2.1. DateOfBirthRecord

Month, Day and Year of birth. Used to calculate age

Encoding: HLAfixedRecord

Name	Datatype	Semantics
month	Integer32BE	MM month of birth
day	Integer32BE	DD of birth
year	Integer32BE	YYYY of birth

2.4.2.2. SkinRashRecord

Description of the rash.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
rashRaised	HLAboolean	Indicate if the rash is flat or raised. True/1 = raised. False/0 = not raised.
rashUniform	HLAboolean	Indicate if the rash is uniform or spotty. True/1 = uniform. False/0 = spotty.
rashScab	HLAboolean	Indicate if the rash has scabbed areas. True/1 = scabbed, False/0 = not scabbed.

2.5. Switches

Auto Provide	Enabled
Convey Region Designator Sets	Disabled
Convey Producing Federate	Disabled
Attribute Scope Advisory	Disabled
Attribute Relevance Advisory	Disabled
Object Class Relevance Advisory	Disabled
Interaction Relevance Advisory	Disabled
Service Reporting	Disabled
Exception Reporting	Disabled
Delay Subscription Evaluation	Disabled
Automatic Resign Action	CancelThenDeleteThenDivest

3. Instructional

3.1. Identification

Name	Instructional
Type	FOM
Version	3a
Modification Date	2020-03-13
Security Classification	unclassified
Purpose	The instructional module will connect the simulations, trainee(s) and the Learning Management System
Application Domain	Training
Description	The Instructional module will contain data about Instructor/Observer's actions during simulations plus data needed by a Learning Management System (LMS).
Use Limitation	The Medical Modeling and Simulation Federation Object Model by Information Visualization and Innovative Research, Inc. is licensed under CC BY-ND 4.0. To view a copy of this license, visit https://creativecommons.org/licenses/by-nd/4.0/
Other	

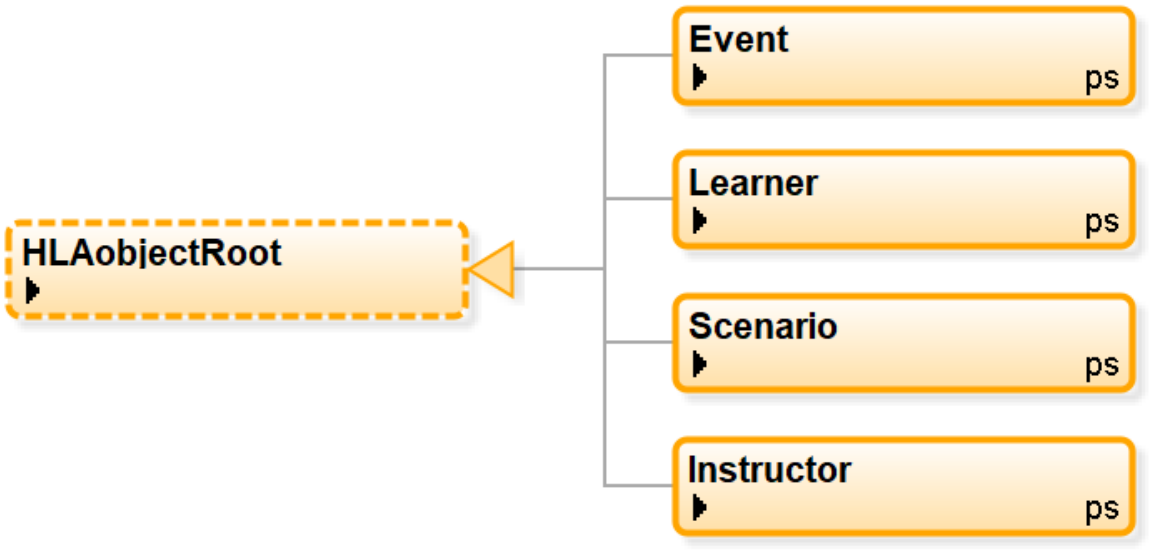
3.1.1. Technical POC Point of Contact

Name	
Organization	Information Visualization and Innovative Research Inc.
Telephone	
Email	jets@ivirinc.com

3.1.2. Dependencies

- Base

3.2. Object Classes



3.2.1. Event

HLAobjectRoot.Event

Events may be created at points in the execution. Each event is a new instance.
Events may be created automatically from scenario events or manually inserted by the instructor. Events can be used to indicate actions taken by a learner that are not treatments, such as putting on gloves.

Attribute	Datatype	Semantics
time	HLAinteger64Time	Wallclock (epoch) time of the event. Allows determination of when the event took place in epoch time.
simTime	HLAinteger64Time	Simulation elapsed time the event pertains to.
type	EventTypeEnum	Type provides a basic description of how the event was created or its importance. Allows a system to better organize and categorize events.
source	HLAASCIIstring	Who created the event (Federate Name).
patientId	HLAASCIIstring	Patient the event applies to (may be null).
learnerId	HLAASCIIstring	Learner the event applies to (may be null).
instructorId	HLAASCIIstring	Instructor the event applies to (may be null).
teamId	HLAASCIIstring	Team the event applies to (may be null).
trainingFacilityId	HLAASCIIstring	Used to identify the training facility an Event is associated with.
notes	HLAASCIIstring	Text associated with the event to provide a top level description of the event (may be null).
description	HLAASCIIstring	A longer description of the contents of the notes attribute.

3.2.2. Learner

HLAobjectRoot.Learner

Parameters of learner(s) that an instructional module would need.

Attribute	Datatype	Semantics
learnerId	HLAASCIIstring	Some type of globally unique identifier
lastName	HLAASCIIstring	Last name of learner
firstName	HLAASCIIstring	First name of the learner
id_SSAN	HLAASCIIstring	SSAN or whatever ID is used in the training domain.

3.2.3. Scenario

HLAobjectRoot.Scenario

Used to both identify and point to a scenario.

Attribute	Datatype	Semantics
scenarioId	HLAASCIIstring	The scenarioId is used to uniquely identify a particular scenario from the database.

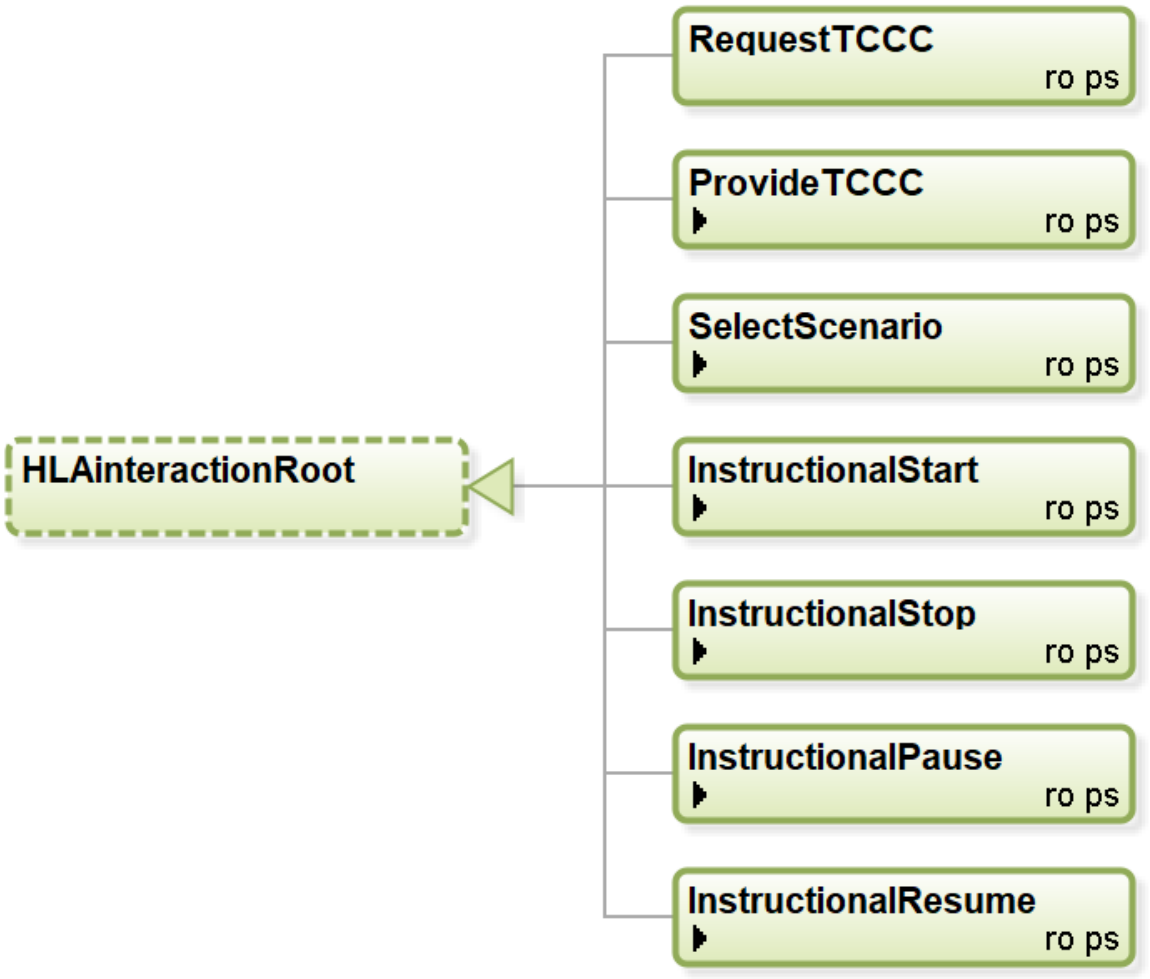
3.2.4. Instructor

HLAobjectRoot.Instructor

Parameters of instructor(s) that an instructional module would need. Each instructor would result in a separate Instructor instance being created.

Attribute	Datatype	Semantics
instructorId	HLAASCIIstring	Some type of globally unique identifier
lastName	HLAASCIIstring	Last name of instructor
firstName	HLAASCIIstring	First name of the instructor
id_SSAN	HLAASCIIstring	SSAN or whatever ID is used in the training domain.

3.3. Interaction Classes



3.3.1. RequestTCCC

HLAinteractionRoot.RequestTCCC
Placeholder, to be expanded.

3.3.2. ProvideTCCC

HLAinteractionRoot.ProvideTCCC
Placeholder, to be expanded.

Parameter	Datatype	Semantics
patient	HLAASCIIstring	An agreed upon name of a pre-defined DD1380 sent to subscribing federate

3.3.3. SelectScenario

HLAinteractionRoot.SelectScenario
This interaction will be used to identify the particular scenario to be used in the federation execution.

Parameter	Datatype	Semantics
scenarioName	HLAASCIIstring	The string name of the scenario to be loaded.

3.3.4. InstructionalStart

HLAinteractionRoot.InstructionalStart
Command to start the Instructional/AAR system for a particular trainingFacilityId.

Parameter	Datatype	Semantics
trainingFacilityId	HLAASCIIstring	Training facility the instructional system is associated with.

3.3.5. InstructionalStop

HLAinteractionRoot.InstructionalStop
Command to stop the Instructional/AAR system for a particular trainingFacilityId.

Parameter	Datatype	Semantics
trainingFacilityId	HLAASCIIstring	Training facility the instructional system is associated with.

3.3.6. InstructionalPause

HLAinteractionRoot.InstructionalPause
Command to pause the Instructional/AAR system for a particular trainingFacilityId.

Parameter	Datatype	Semantics
trainingFacilityId	HLAASCIIstring	Training facility the instructional system is associated with.

3.3.7. InstructionalResume

HLAinteractionRoot.InstructionalResume
Command to resume the Instructional/AAR system for a particular trainingFacilityId.

Parameter	Datatype	Semantics
trainingFacilityId	HLAASCIIstring	Training facility the instructional system is associated with.

3.4. Datatypes

3.4.1. Enumerated Datatypes

3.4.1.1. EventTypeEnum

The type of the event being recorded.

Representation: HLAinteger32BE

Enumerator	Value
notApplicable	0
instructorObservation	1
treatment	2
learnerAction	3

3.5. Switches

Auto Provide	Enabled
Convey Region Designator Sets	Disabled
Convey Producing Federate	Disabled
Attribute Scope Advisory	Disabled
Attribute Relevance Advisory	Disabled
Object Class Relevance Advisory	Disabled
Interaction Relevance Advisory	Disabled
Service Reporting	Disabled
Exception Reporting	Disabled
Delay Subscription Evaluation	Disabled
Automatic Resign Action	CancelThenDeleteThenDivest

4. Facility

4.1. Identification

Name	Facility
Type	FOM
Version	0.2
Modification Date	2019-07-22
Security Classification	unclassified
Purpose	To model facilities providing evacuation and enroute medical care
Application Domain	Training
Description	Used to describe the various facilities offering evacuation and enroute treatment to an injured patient. Reference Medical Operations Handbook which describes facility characteristics Also Army Techniques Publication No. 4-25.13 - Casualty Evacuation
Use Limitation	
Other	

4.1.1. Technical POC Point of Contact

Name	
Organization	Information Visualization and Innovative Research Inc.
Telephone	
Email	jets@ivirinc.com

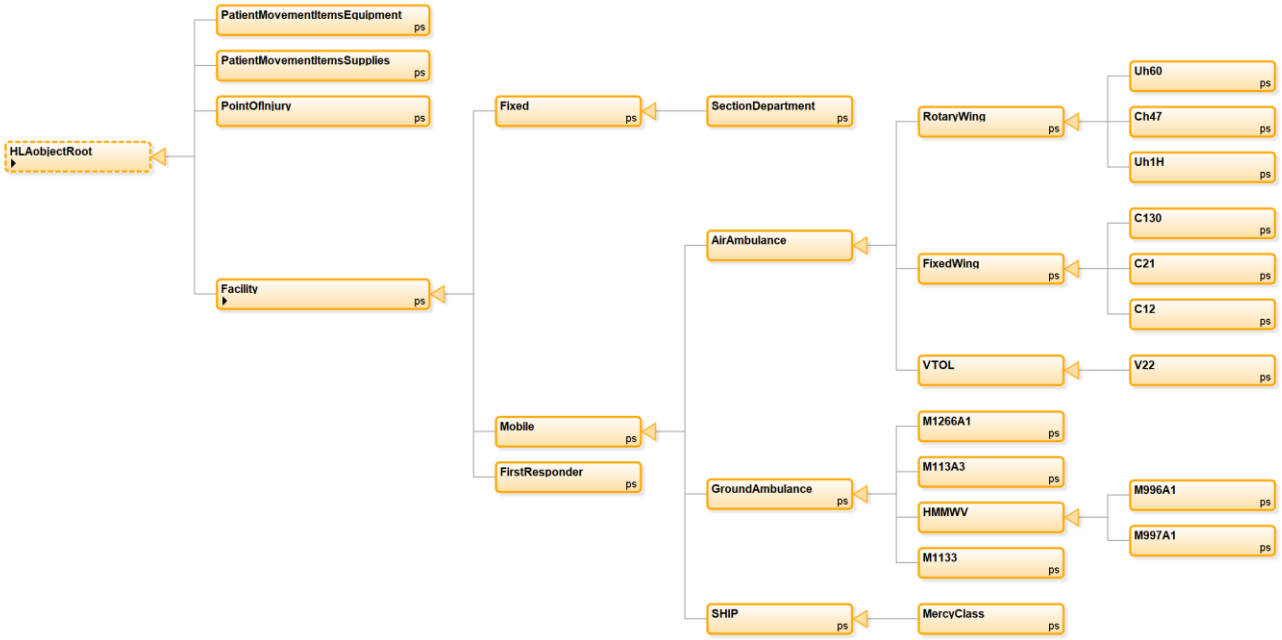
4.1.2. References

Type	**Reference**
Army Techniques Publication No. 4-25.13 - Casualty Evacuation	

4.1.3. Dependencies

- Base

4.2. Object Classes



4.2.1. PatientMovementItemsEquipment

HLAobjectRoot.PatientMovementItemsEquipment

Placeholder, to be expanded.

4.2.2. PatientMovementItemsSupplies

HLAobjectRoot.PatientMovementItemsSupplies

Placeholder. Originally meant to represent things like hoists and litters that would stay with the evacuation vehicle.

4.2.3. PointOfInjury

HLAobjectRoot.PointOfInjury

Placeholder, to be expanded.

4.2.4. Facility

HLAobjectRoot.Facility

Generally, describes any physical location that can provide medical support. Ambulances/AE helos are mobile facilities while hospitals are fixed.

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.

availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.5. Fixed

HLAobjectRoot.Facility.Fixed

This is the superclass for all fixed hospital facilities.

Attribute	**Datatype**	**Semantics**
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.6. SectionDepartment

HLAobjectRoot.Facility.Fixed.SectionDepartment

Placeholder.

Attribute	**Datatype**	**Semantics**
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.

availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.7. Mobile

HLAobjectRoot.Facility.Mobile

Indicates a medical treatment facility that is mobile (e.g. Ship, Plane, Ambulance).

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.8. AirAmbulance

HLAobjectRoot.Facility.Mobile.AirAmbulance

Any aircraft (fixed or rotary wing) capable of evacuating casualities.

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.

availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.9. RotaryWing

HLAobjectRoot.Facility.Mobile.AirAmbulance.RotaryWing

Rotary wing aircraft capable of evacuating casualities.

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.10. Uh60

HLAobjectRoot.Facility.Mobile.AirAmbulance.RotaryWing.Uh60

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.

availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.11. Ch47

HLAobjectRoot.Facility.Mobile.AirAmbulance.RotaryWing.Ch47

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.12. Uh1H

HLAobjectRoot.Facility.Mobile.AirAmbulance.RotaryWing.Uh1H

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.

maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.13. FixedWing

HLAobjectRoot.Facility.Mobile.AirAmbulance.FixedWing

Fixed wing aircraft used for Aeromedical Evacuation

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.14. C130

HLAobjectRoot.Facility.Mobile.AirAmbulance.FixedWing.C130

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.

availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.15. C21

HLAobjectRoot.Facility.Mobile.AirAmbulance.FixedWing.C21

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.16. C12

HLAobjectRoot.Facility.Mobile.AirAmbulance.FixedWing.C12

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.17. VTOL

HLAobjectRoot.Facility.Mobile.AirAmbulance.VTOL

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.18. V22

HLAobjectRoot.Facility.Mobile.AirAmbulance.VTOL.V22

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.19. GroundAmbulance

HLAobjectRoot.Facility.Mobile.GroundAmbulance

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.

entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.20. M1266A1

HLAobjectRoot.Facility.Mobile.GroundAmbulance.M1266A1

Attribute	**Datatype**	**Semantics**
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.21. M113A3

HLAobjectRoot.Facility.Mobile.GroundAmbulance.M113A3

Attribute	**Datatype**	**Semantics**
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity

maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.22. HMMWV

HLAobjectRoot.Facility.Mobile.GroundAmbulance.HMMWV

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.23. M996A1

HLAobjectRoot.Facility.Mobile.GroundAmbulance.HMMWV.M996A1

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.

availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.24. M997A1

HLAobjectRoot.Facility.Mobile.GroundAmbulance.HMMWV.M997A1

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.25. M1133

HLAobjectRoot.Facility.Mobile.GroundAmbulance.M1133

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.

maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.26. SHIP

HLAobjectRoot.Facility.Mobile.SHIP

Ships capable of accepting casualties.

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.27. MercyClass

HLAobjectRoot.Facility.Mobile.SHIP.MercyClass

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.

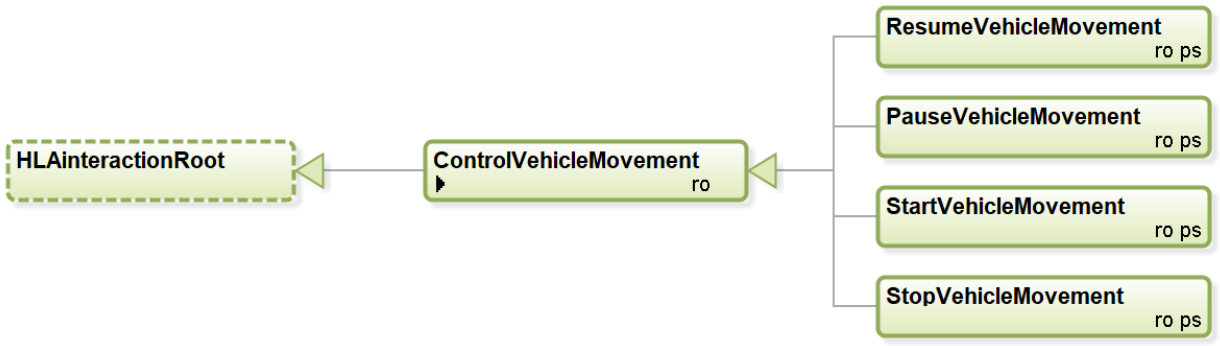
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.2.28. FirstResponder

HLAobjectRoot.Facility.FirstResponder

Attribute	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.
entityId	HLAASCIIstring	Used to associate a RpR Platform entity to a medical platform.
location	PhysicalLocationRecord	Represent the physical location of an entity
maximumLitters	Integer32BE	The maximum number of litters should not change during an execution. The number of available litters will change as patients are transported.
availableLitters	Integer32BE	When Platform is created, this value should be set to the value of Max_Litters. As patients are loaded on litters, this value should be decremented. As patients are offloaded, the value should be incremented.
maximumAmbulatory	Integer32BE	Maximum number of ambulatory patients a vehicle can accommodate.
availableAmbulatory	Integer32BE	Number of currently available ambulatory positions in a vehicle

4.3. Interaction Classes



4.3.1. ControlVehicleMovement

HLAinteractionRoot.ControlVehicleMovement

Interactions to start, stop, pause and resume vehicle movement.

Parameter	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.

4.3.2. ResumeVehicleMovement

HLAinteractionRoot.ControlVehicleMovement.ResumeVehicleMovement

Used to resume vehicle movement

Parameter	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.

4.3.3. PauseVehicleMovement

HLAinteractionRoot.ControlVehicleMovement.PauseVehicleMovement
Used to pause vehicle movement

Parameter	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.

4.3.4. StartVehicleMovement

HLAinteractionRoot.ControlVehicleMovement.StartVehicleMovement
Used to start vehicle movement

Parameter	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.

4.3.5. StopVehicleMovement

HLAinteractionRoot.ControlVehicleMovement.StopVehicleMovement
Used to stop vehicle movement

Parameter	Datatype	Semantics
facilityId	HLAASCIIstring	A unique Identifier for a facility.

4.4. Switches

Auto Provide	Enabled
Convey Region Designator Sets	Disabled
Convey Producing Federate	Disabled
Attribute Scope Advisory	Disabled
Attribute Relevance Advisory	Disabled
Object Class Relevance Advisory	Disabled
Interaction Relevance Advisory	Disabled
Service Reporting	Disabled

Exception Reporting	Disabled
Delay Subscription Evaluation	Disabled
Automatic Resign Action	CancelThenDeleteThenDivest

5. TransferPatient

5.1. Identification

Name	TransferPatient
Type	FOM
Version	0.2
Modification Date	2019-07-22
Security Classification	unclassified
Purpose	To model data exchanges related to the actual transfer PROCESS of transporting patients.
Application Domain	Training
Description	
Use Limitation	The Medical Modeling and Simulation Federation Object Model by Information Visualization and Innovative Research, Inc. is licensed under CC BY-ND 4.0. To view a copy of this license, visit https://creativecommons.org/licenses/by-nd/4.0/
Other	

5.1.1. Technical POC Point of Contact

Name	
Organization	Information Visualization and Innovative Research Inc.
Telephone	
Email	jets@ivirinc.com

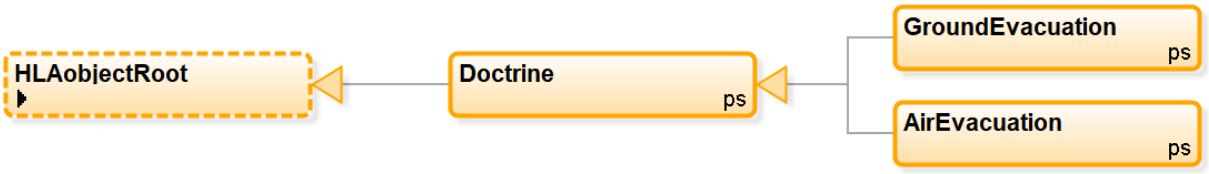
5.1.2. References

Type	Reference
https://military-medicine.com/article/3083-forward-medical-evacuation.html	
DOD INSTRUCTION 6000.11 - PATIENT MOVEMENT (PM)	

5.1.3. Dependencies

- Base

5.2. Object Classes



5.2.1. Doctrine
HLAobjectRoot.Doctrine

Placeholder.

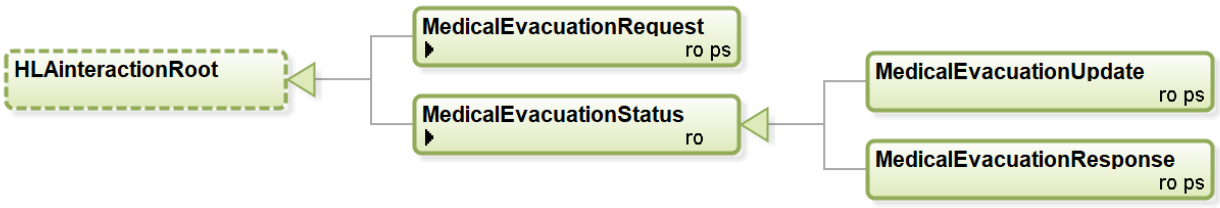
5.2.2. GroundEvacuation
HLAobjectRoot.Doctrine.GroundEvacuation

Placeholder.

5.2.3. AirEvacuation
HLAobjectRoot.Doctrine.AirEvacuation

Placeholder.

5.3. Interaction Classes



5.3.1. MedicalEvacuationRequest
HLAinteractionRoot.MedicalEvacuationRequest
Federation communication to request the start of a medical evacuation simulation, does not replace the 9-line report.

Parameter	Datatype	Semantics
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
transportType	TransportTypeEnum	The type of evacuation transport vehicle requested.
siteName	HLAASCIIstring	Name of destination for current route.

5.3.2. MedicalEvacuationStatus
HLAinteractionRoot.MedicalEvacuationStatus

Status update on evacuation.

Parameter	Datatype	Semantics
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
medicalEvacuationState	MedicalEvacuationStateEnum	current state of the evacuation
vehicleId	HLAASCIIstring	Vehicle id
siteName	HLAASCIIstring	Name of destination for current route.

5.3.3. MedicalEvacuationUpdate

HLAinteractionRoot.MedicalEvacuationStatus.MedicalEvacuationUpdate
This interaction is used to indicate that the patient is loaded and ready for transport to next role.

Parameter	Datatype	Semantics
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
medicalEvacuationState	MedicalEvacuationStateEnum	current state of the evacuation
vehicleId	HLAASCIIstring	Vehicle id
siteName	HLAASCIIstring	Name of destination for current route.

5.3.4. MedicalEvacuationResponse

HLAinteractionRoot.MedicalEvacuationStatus.MedicalEvacuationResponse
This interaction is used to respond to the medevac request to indicate acknowledgement of the request, vehicle enroute and vehicle arrival.

Parameter	Datatype	Semantics
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
medicalEvacuationState	MedicalEvacuationStateEnum	current state of the evacuation
vehicleId	HLAASCIIstring	Vehicle id
siteName	HLAASCIIstring	Name of destination for current route.

5.4. Datatypes

5.4.1. Enumerated Datatypes

5.4.1.1. TransportTypeEnum

Enumeration for the type of evacuation.

Representation: HLAinteger32BE

Enumerator	Value
unknown	0
ground	1
air	2

5.4.1.2. MedicalEvacuationStateEnum

State/Status of the evacuation.

Representation: HLAinteger32BE

Enumerator	Value
notApplicable	0
acknowledgement	1
enroute	2
arrival	3
patientLoaded	4
dropoff	5

5.5. Switches

Auto Provide	Enabled
Convey Region Designator Sets	Disabled
Convey Producing Federate	Disabled
Attribute Scope Advisory	Disabled
Attribute Relevance Advisory	Disabled
Object Class Relevance Advisory	Disabled
Interaction Relevance Advisory	Disabled
Service Reporting	Disabled
Exception Reporting	Disabled
Delay Subscription Evaluation	Disabled
Automatic Resign Action	CancelThenDeleteThenDivest

6. MedicalLogistics

6.1. Identification

Name	MedicalLogistics
Type	FOM
Version	0.2
Modification Date	2019-07-23
Security Classification	unclassified
Purpose	Modeling medical logistics related to medical evacuation
Application Domain	Training
Description	The MedicalLogistics module contains the representations related to all medical logistics. Representations of Logistics will differ by role level.
Use Limitation	The Medical Modeling and Simulation Federation Object Model by Information Visualization and Innovative Research, Inc. is licensed under CC BY-ND 4.0. To view a copy of this license, visit https://creativecommons.org/licenses/by-nd/4.0/
Other	

6.1.1. Technical POC Point of Contact

Name	
Organization	Information Visualization and Innovative Research Inc.
Telephone	
Email	jets@ivirinc.com

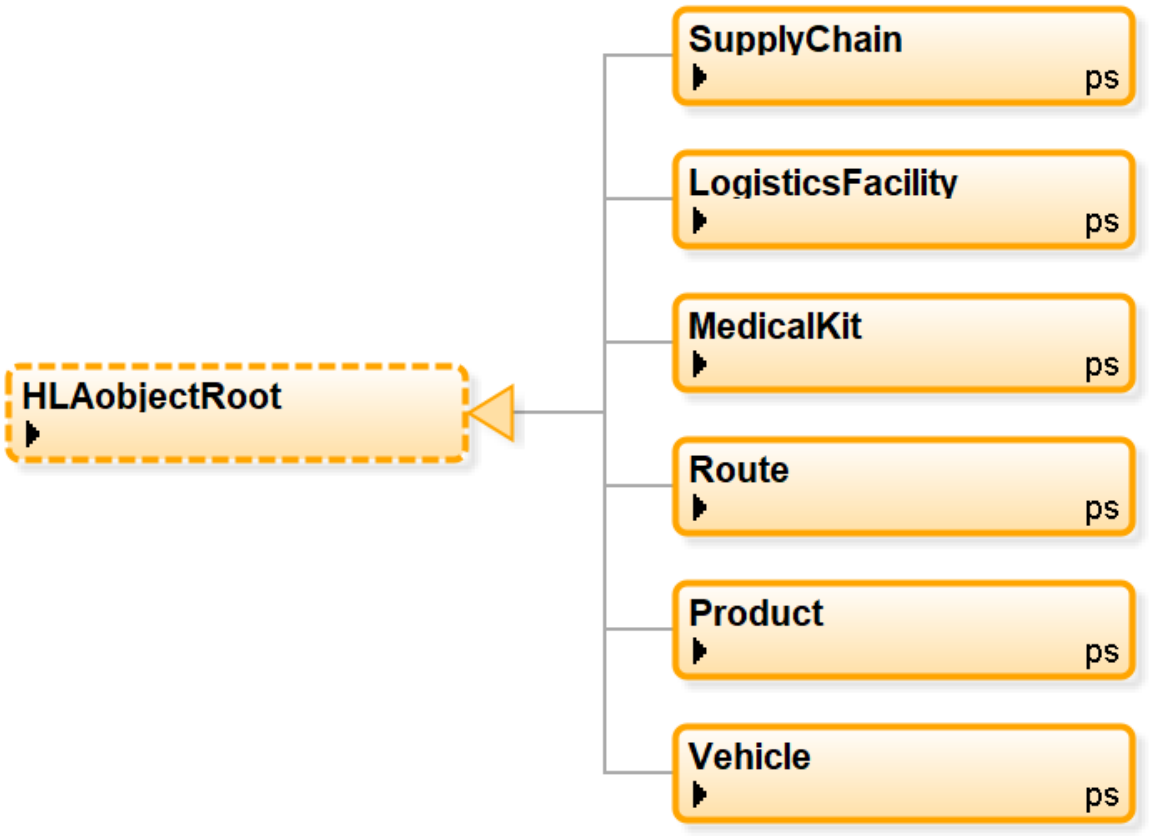
6.1.2. References

Type	**Reference**
FM 4-02.1 - Army Medical Logistics	

6.1.3. Dependencies

- Base

6.2. Object Classes



6.2.1. SupplyChain

HLAobjectRoot.SupplyChain

Attribute	Datatype	Semantics
data	HLAASCIIstring	
name	HLAASCIIstring	
routesData	HLAASCIIstring	
userId	Integer32BE	

6.2.2. LogisticsFacility

HLAobjectRoot.LogisticsFacility

Attribute	Datatype	Semantics
address	HLAASCIIstring	
dailyCarbonOutputKg	HLAASCIIchar	
demands	Integer32BE	
energyCost	Integer32BE	
location	PhysicalLocationRecord	
modelUrl	HLAASCIIstring	

name	HLAASCIIstring	
optCost	FloatType32BE	
outputs	FloatType32BE	
routeDrawType	HLAboolean	
speed	FloatType32BE	
storageCapacity	FloatType32BE	
stored	FloatType32BE	

6.2.3. MedicalKit

HLAobjectRoot.MedicalKit

Attribute	Datatype	Semantics
items	medicalKitArray	Treatments from the Physiology module will reference items in a medical kit and decrement the quantity when consumable items are used.

6.2.4. Route

HLAobjectRoot.Route

Attribute	Datatype	Semantics
distance	FloatType32BE	Kilometers
distanceMeasureType	HLAASCIIstring	units of distance. Typically Kilometers
googleData	HLAASCIIstring	
name	HLAASCIIstring	
sequence	Integer32BE	
speedLimit	Integer32BE	
supplyChainId	Integer32BE	
tolls	Integer32BE	
userId	Integer32BE	
vehiclesPerHour	Integer32BE	

6.2.5. Product

HLAobjectRoot.Product

Attribute	Datatype	Semantics
cubeSize	FloatType32BE	
name	HLAASCIIstring	

price	FloatType32BE	
userId	Integer32BE	
weight	FloatType32BE	

6.2.6. Vehicle

HLAobjectRoot.Vehicle

logistics vehicle

Attribute	Datatype	Semantics
arrival	FloatType32BE	
carbonKgPerKm	FloatType32BE	
carryVolume	Integer32BE	
carryWeight	Integer32BE	Kilograms
carrying	Integer32BE	
costPerKg	FloatType32BE	
crewCost	Integer32BE	
crewSize	Integer32BE	
delay	FloatType32BE	
departure	FloatType32BE	
KmPerLiter	FloatType32BE	fuel consumption
maxWeight	Integer32BE	kilograms
name	HLAASCIIstring	
operatingCost	Integer32BE	integer or float
routeDrawType	Integer32BE	
speed	Integer32BE	
state	Integer32BE	
userId	Integer32BE	

6.3. Datatypes

6.3.1. Array Datatypes

Name	Element datatype	Cardinality	Encoding	Semantics
medicalKitArray	MedicalItemRecord	Dynamic	HLAvariableArray	A dynamic length array of medical items

6.3.2. Fixed Record Datatypes

6.3.2.1. MedicalItemRecord

This record describes a single medical item. Kits are made up of arrays of medical items.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
name	HLAASCIIstring	Name of the medical item
quantity	Integer32BE	Discrete quantity of the medical item
partId	HLAASCIIstring	For now, the government issued id for the item.
consumable	HLAboolean	Is the item reusable or consumable.

6.4. Switches

Auto Provide	Enabled
Convey Region Designator Sets	Disabled
Convey Producing Federate	Disabled
Attribute Scope Advisory	Disabled
Attribute Relevance Advisory	Disabled
Object Class Relevance Advisory	Disabled
Interaction Relevance Advisory	Disabled
Service Reporting	Disabled
Exception Reporting	Disabled
Delay Subscription Evaluation	Disabled
Automatic Resign Action	CancelThenDeleteThenDivest

7. Base

7.1. Identification

Name	Base
Type	FOM
Version	0.2
Modification Date	2019-07-23
Security Classification	unclassified
Purpose	Provide common data definitions
Application Domain	
Description	Base module containing data that will be duplicated across modules.
Use Limitation	The Medical Modeling and Simulation Federation Object Model by Information Visualization and Innovative Research, Inc. is licensed under CC BY-ND 4.0. To view a copy of this license, visit https://creativecommons.org/licenses/by-nd/4.0/
Other	

7.1.1. Technical POC Point of Contact

Name	
Organization	Information Visualization and Innovative Research Inc.
Telephone	
Email	jets@ivirinc.com

7.2. Datatypes

7.2.1. Simple Datatypes

Name	Units	Semantics
Integer32BE	NA	Basic Data Types (e.g. HLAinteger32BE) cannot be used directly. Integer32BE is a Simple data type that can be used directly.
Length_Float64BE	NA	Basic Data types may not be used directly in a FOM.
FloatType32BE	NA	Basic Data Types (e.g. HLAfloat32BE) cannot be used directly. FloatType32BE is a Simple data type that can be used directly.

7.2.2. Enumerated Datatypes

7.2.2.1. BodyLocationCoarseEnum

Coarse Body Location enum.

Representation: HLAinteger32BE

Enumerator	Value
notApplicable	0
anteriorHeadFace	1
anteriorRightLateralHeadFace	2
anteriorLeftLateralHeadFace	3
anteriorNeck	4
anteriorSternum	5
anteriorRightPelvis	6
anteriorLeftPelvis	7
anteriorGenitals	8
anteriorRightUpperThorax	9
anteriorRightLowerThorax	10
anteriorLeftUpperThorax	11
anteriorLeftLowerThorax	12
anteriorAbdomenRightUpperQuadrant	13
anteriorAbdomenRightLowerQuadrant	14
anteriorAbdomenLeftUpperQuadrant	15
anteriorAbdomenLeftLowerQuadrant	16
anteriorRightShoulder	17
anteriorRightUpperArm	18
anteriorRightForeArm	19
anteriorRightWristHand	20
anteriorRightThigh	21
anteriorRightKnee	22
anteriorRightLowerLeg	23
anteriorRightAnkleFoot	24
anteriorLeftShoulder	25
anteriorLeftUpperArm	26
anteriorLeftForeArm	27
anteriorLeftWristHand	28
anteriorLeftThigh	29
anteriorLeftKnee	30
anteriorLeftLowerLeg	31
anteriorLeftAnkleFoot	32
posteriorHead	33
posteriorNeck	34

posteriorUpperCervicalSpine	35
posteriorMiddleThoracicSpine	36
posteriorLowerLumbarCoccyxSpine	37
posteriorLeftButtocks	38
posteriorRightButtocks	39
posteriorLeftUpperThorax	40
posteriorLeftLowerThorax	41
posteriorRightUpperThorax	42
posteriorRightLowerThorax	43
posteriorLeftFlank	44
posteriorRightFlank	45
posteriorLeftShoulder	46
posteriorLeftUpperArm	47
posteriorLeftForeArm	48
posteriorLeftWristHand	49
posteriorLeftThigh	50
posteriorLeftKnee	51
posteriorLeftLowerLeg	52
posteriorLeftAnkleFoot	53
posteriorRightShoulder	54
posteriorRightUpperArm	55
posteriorRightForeArm	56
posteriorRightWristHand	57
posteriorRightThigh	58
posteriorRightKnee	59
posteriorRightLowerLeg	60
posteriorRightAnkleFoot	61

7.2.2.2. BodyLocationFineEnum

Fine body location enums.

Representation: HLAinteger32BE

Enumerator	Value
anteriorHead	1
anteriorFace	2
anteriorNeck	3
anteriorSternum	4
anteriorPelvis	5

anteriorGenitals	6
anteriorRightUpperChest	7
anteriorRightLowerChest	8
anteriorRightUpperQuadrant	9
anteriorRightLowerQuadrant	10
anteriorRightGroin	11
anteriorRightHip	12
anteriorRightShoulder	13
anteriorRightBicep	14
anteriorRightElbow	15
anteriorRightProximalForearm	16
anteriorRightMiddleForearm	17
anteriorRightDistalForearm	18
anteriorRightWrist	19
anteriorRightPalm	20
anteriorRightProximalThigh	21
anteriorRightMiddleThigh	22
anteriorRightDistalThigh	23
anteriorRightKnee	24
anteriorRightProximalLowerLeg	25
anteriorRightMiddleLowerLeg	26
anteriorRightDistalLowerLeg	27
anteriorRightAnkle	28
anteriorRightFoot	29
anteriorLeftUpperChest	30
anteriorLeftLowerChest	31
anteriorLeftUpperQuadrant	32
anteriorLeftLowerQuadrant	33
anteriorLeftGroin	34
anteriorLeftHip	35
anteriorLeftShoulder	36
anteriorLeftBicep	37
anteriorLeftElbow	38
anteriorLeftProximalForearm	39
anteriorLeftMiddleForearm	40
anteriorLeftDistalForearm	41
anteriorLeftWrist	42
anteriorLeftPalm	43

anteriorLeftProximalThigh	44
anteriorLeftMiddleThigh	45
anteriorLeftDistalThigh	46
anteriorLeftKnee	47
anteriorLeftProximalLowerLeg	48
anteriorLeftMiddleLowerLeg	49
anteriorLeftDistalLowerLeg	50
anteriorLeftAnkle	51
anteriorLeftFoot	52
posteriorHead	53
posteriorNeck	54
posteriorThoracicSpine	55
posteriorLumbarSpine	56
posteriorTailBone	57
posteriorLeftUpperBack	58
posteriorLeftMiddleBack	59
posteriorLeftLowerBack	60
posteriorLeftButtock	61
posteriorLeftShoulder	62
posteriorLeftBicep	63
posteriorLeftElbow	64
posteriorLeftProximalForearm	65
posteriorLeftMiddleForearm	66
posteriorLeftDistalForearm	67
posteriorLeftWrist	68
posteriorLeftHand	69
posteriorLeftFingers	70
posteriorLeftProximalThigh	71
posteriorLeftMiddleThigh	72
posteriorLeftDistalThigh	73
posteriorLeftKnee	74
posteriorLeftProximalLowerLeg	75
posteriorLeftMiddleLowerLeg	76
posteriorLeftDistalLowerLeg	77
posteriorLeftAnkle	78
posteriorLeftHeel	79
posteriorRightUpperBack	80
posteriorRightMiddleBack	81

posteriorRightLowerBack	82
posteriorRightButtock	83
posteriorRightShoulder	84
posteriorRightBicep	85
posteriorRightElbow	86
posteriorRightProximalForearm	87
posteriorRightMiddleForearm	88
posteriorRightDistalForearm	89
posteriorRightWrist	90
posteriorRightHand	91
posteriorRightFingers	92
posteriorRightProximalThigh	93
posteriorRightMiddleThigh	94
posteriorRightDistalThigh	95
posteriorRightKnee	96
posteriorRightProximalLowerLeg	97
posteriorRightMiddleLowerLeg	98
posteriorRightDistalLowerLeg	99
posteriorRightAnkle	100
posteriorRightHeel	101

7.2.2.3. GenderEnum

Used to identify the gender of an injured patient.

Representation: HLAinteger32BE

Enumerator	Value
unknown	0
male	1
female	2

7.2.2.4. TreatmentDeviceEnum

Type of medical device that can be used in physical treatments administration.

Representation: HLAinteger32BE

Enumerator	Value
notApplicable	0
cervicalCollar	1

extremityTourniquet	2
junctionalTourniquet	3
spineBoard	4
litter	5
bandage	6
gauze	7
ventedOcclusiveDressing	8
occlusiveDressing	9
mylarBlanket	10
chestTube	11
chestNeedleDecompression	12
foleyCatheter	13
oropharyngealAirway	14
nasopharyngealAirway	15
endotrachealTube	16
laryngealTube	17
supraglotticDevice	18
laryngoscope	19
endovascularBalloon	20
eyeShield	21
splint	22
oxygenMask	23

7.2.2.5. BloodTypeEnum

Blood Type

Representation: HLAinteger32BE

Enumerator	Value
oNegative	0
oPositive	1
aNegative	2
aPositive	3
bNegative	4
bPositive	5
abNegative	6
abPositive	7
unknown	8

7.2.2.6. InfectionFunctionEnum

Categories of medications to treat infections.

Representation: HLAinteger32BE

Enumerator	Value
antibiotic	0
antiviral	1
antifungal	2
antiparisitic	3

7.2.2.7. ClottingFunctionEnum

Type of clotting/thinning.

Representation: HLAinteger32BE

Enumerator	Value
coagulant	0
bloodThinner	1

7.2.2.8. CardiacFunctionEnum

Impacting heart rate / rhythm / contractions.

Representation: HLAinteger32BE

Enumerator	Value
positiveInotropic	0
negativeInotropic	1
chronotropic	2
dromotropic	3
bathmotropic	4

7.2.2.9. FluidFunctionEnum

Concentration of fluid, sugars and salt relative to blood.

Representation: HLAinteger32BE

Enumerator	Value
hypertonic	0

isotonic	1
hypotonic	2

7.2.3. Array Datatypes

Name	Element datatype	Cardinality	Encoding	Semantics
BodyAreaCoarseArray	BodyLocationCoarseEnum	Dynamic	HLAvariableArray	A dynamic length array of Coarse Body Locations to designate an "area"
BodyAreaFineArray	BodyLocationFineEnum	Dynamic	HLAvariableArray	A dynamic length array of Fine Body Locations to designate an "Area".

7.2.4. Fixed Record Datatypes

7.2.4.1. GlasgowComaScaleRecord

Glasgow Coma Scale : Based on motor responsiveness, verbal performance, and eye opening to appropriate stimuli.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
eyes	Integer32BE	Eye Opening Response • Spontaneous--open with blinking at baseline 4 points • To verbal stimuli, command, speech 3 points • To pain only (not applied to face) 2 points • No response 1 point
verbal	Integer32BE	Verbal Response • Oriented 5 points • Confused conversation, but able to answer questions 4 points • Inappropriate words 3 points • Incomprehensible speech 2 points • No response 1 point
motor	Integer32BE	Motor Response • Obeys commands for movement 6 points • Purposeful movement to painful stimulus 5 points • Withdraws in response to pain 4 points • Flexion in response to pain (decorticate posturing) 3 points • Extension response in response to pain (decerebrate posturing) 2 points • No response 1 point

7.2.4.2. PhysicalLocationRecord

Record representing a physical location using latitude, longitude, altitude. Simulators using different terrain models might have to adapt.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
latitude	Length_Float64BE	latitude
longitude	Length_Float64BE	longitude
altitude	Length_Float64BE	Meters above mean sea level

8. Communications

8.1. Identification

Name	Communications
Type	FOM
Version	0.2
Modification Date	2019-07-23
Security Classification	unclassified
Purpose	Patient documents, radio communication, and command control messages
Application Domain	Training
Description	The Communications module will contain models of patient documentation forms, radio communication, and command and control messages. Classes in the Communications module are "Perceived Truth" and are supplied/recorded by the trainee based on observations and treatments of the "Ground Truth" patient in the Patient module.
Use Limitation	
Other	

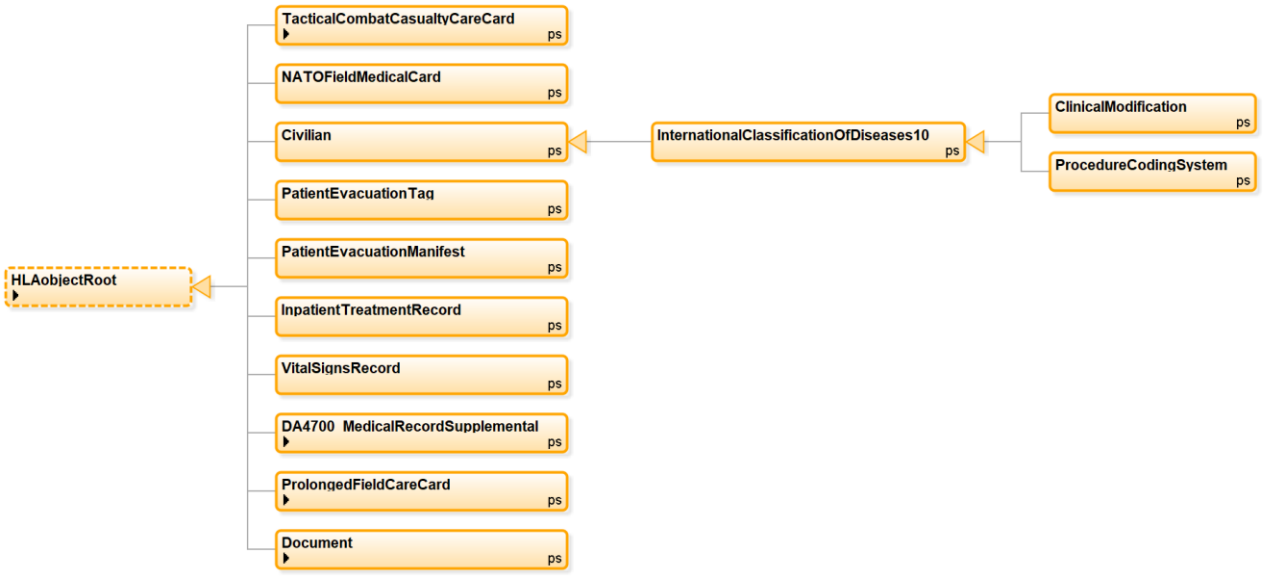
8.1.1. Technical POC Point of Contact

Name	
Organization	Information Visualization and Innovative Research Inc.
Telephone	
Email	jets@ivirinc.com

8.1.2. Dependencies

- Base

8.2. Object Classes



8.2.1. TacticalCombatCasualtyCareCard

HLAobjectRoot.TacticalCombatCasualtyCareCard

DD1380.

Attribute	Datatype	Semantics
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
battleRosterNumber	HLAASCIIstring	Record first letter of patient's first name, then first letter of patient's last name, then record the last four numbers of patient's Social Security number. For example, John Doe 123-12-1234 is Battle Roster # 'JD1234'.
evacuationLevelRequest	EvacuationCategoryEnum	Urgent, Priority, Routine level of evac request
lastName	HLAASCIIstring	Last name of patient
firstName	HLAASCIIstring	first name of patient
socialSecurityAccountNumber	HLAASCIIstring	Some 1380 instructions call for full ssan, others last 4. Also, some injured personnel may not have a SSAN.
gender	GenderEnum	Gender of patient
date	HLAASCIIstring	Write date of injury in DD-MMM-YY format. For example, "29-JUN-13".
time	HLAASCIIstring	Write 24 hour time of injury, and indicate whether local (L) or zulu (Z) time. For example, "1300Z".
service	HLAASCIIstring	String describing the service branch... Typical entries are USCIV, NON US, USA, USAF, CG, USN, USMC

unit	HLAASCIIstring	Unit the patient is attached to. Leave blank if unknown or N/A
allergies	HLAASCIIstring	String containing allergies if known. Multiple allergies should be separated by a comma
mechanismOfInjury	MechanismOfInjuryRecord	Check all mechanisms of injury that apply.
injuryAnnotation	InjuryAnnotationRecord	Injury section of the DD1380. Consists of four extremity tourniquets and an array of injury/location entries.
signsSymptoms	SignsSymptomsArray	The DD1380 allows four entries for signs and symptoms. These are the "perceived" signs and symptoms as determined and recorded by the medic trainee.
treatmentCirculatoryTourniquet	TreatmentCirculatoryTourniquetRecord	Mark an “X” for all Circulation hemorrhage control interventions. For tourniquets (TQ), mark category (Extremity, Junctional and/or Truncal) and write name of TQ(s) used. For dressings, mark category (Hemostatic, Pressure, and/or Other) and write type of dressing(s) used.
treatmentCirculatoryDressing	TreatmentCirculatoryDressingRecord	For dressings, mark category (Hemostatic, Pressure, and/or Other) and write type of dressing(s) used.
treatmentAirway	TreatmentAirwayRecord	Mark an “X” for all Airway interventions (Intact, NPA (nasopharyngeal airway), CRIC (cricothyroidotomy), ET Tube (endotracheal tube), SGA (supraglottic airway) and write type of device(s) used
treatmentBreathing	TreatmentBreathingRecord	Mark an “X” for all Breathing interventions (O2 (oxygen), Needle-D (needle decompression), Chest-Tube, Chest-Seal) and write type of device(s) used
treatmentFluids	TreatmentFluidArray	Circulation resuscitation interventions. Write name, volume, route, and time of any fluids given.
treatmentBloodProducts	TreatmentFluidArray	Circulation resuscitation interventions. Write name, volume, route, and time of any blood products given.
treatmentMedicationsAnalgesic	TreatmentMedicationsAnalgesicArray	Medications. Write name, dose, route, and time of any analgesics given.
treatmentMedicationsAntibiotic	TreatmentMedicationsAntibioticsArray	Medications. Write name, dose, route, and time of any antibiotics given.
treatmentMedicationsOther	treatmentMedicationsOtherArray	Medications. Write name, dose, route, and time of any other administered medications.

treatmentOther	TreatmentOtherRecord	Mark an “X” for other treatments administered (combat pill pack, eye shield (mark right (R) or left (L)), splint, hypothermia prevention) and type of device(s) used.
treatmentNotes	HLAASCIIstring	Use this space to record any other pertinent information and/or clarifications.
responder	ResponderRecord	Information about the first responder providing the care

8.2.2. NATOFieldMedicalCard
HLAobjectRoot.NATOFieldMedicalCard

Placeholder.

8.2.3. Civilian
HLAobjectRoot.Civilian

Placeholder.

8.2.4. InternationalClassificationOfDiseases10
HLAobjectRoot.Civilian.InternationalClassificationOfDiseases10

Placeholder.

8.2.5. ClinicalModification
HLAobjectRoot.Civilian.InternationalClassificationOfDiseases10.ClinicalModification

Placeholder.

8.2.6. ProcedureCodingSystem
HLAobjectRoot.Civilian.InternationalClassificationOfDiseases10.ProcedureCodingSystem

Placeholder.

8.2.7. PatientEvacuationTag
HLAobjectRoot.PatientEvacuationTag

DD 602

Source: FM 8-10-6 Appendix H Section 3 DD Form 602. Implements NATO STANAG 2132.

The DD Form 602, Patient Evacuation Tag, is a record of the patient's medical treatment. When evacuating a patient aboard during HCAA operations, the DD Form 1380 will suffice as a treatment record if the DD Form 602 is not available.

Placeholder.

8.2.8. PatientEvacuationManifest

HLAobjectRoot.PatientEvacuationManifest

DD601
Source: FM 8-10-6, Appendix H, Section 2

AF AE system requires a DD 601.

Placeholder.

8.2.9. InpatientTreatmentRecord

HLAobjectRoot.InpatientTreatmentRecord

DA 3647: Inpatient Treatment Record Cover Sheet

Placeholder.

8.2.10. VitalSignsRecord

HLAobjectRoot.VitalSignsRecord

SF 511 - Patient Vital Signs Record - Part of permanent patient record.
Placeholder.

8.2.11. DA4700_MedicalRecordSupplemental

HLAobjectRoot.DA4700_MedicalRecordSupplemental

See AR 40-66 regarding use of this form.

Placeholder.

Attribute names are preceded with a "letter_" with the following distinction:

a_ refers to the top section Event through Capability and the bottom Section labeled Patient's Identification

b_ refers to the Circulation - Hemorrhage Control section

c_ refers to the Airway section

d_ refers to the Breathing section

e_ refers to the Annotate Injuries section

f_ refers to the Circulation - Assessment section

g_ refers to the Circulation - Resuscitation section

h_ refers to the Vital Signs section

i_ refers to the Additional Interventions section

j_ refers to the Medications and Fluids section

k_ refers to several sections: Documents Received, Narrative Summary of Care, Enroute Care Provider and Casualty's Protective Equipment

l_ refers to AAR Discussion, Sustains and Improves sections

Attribute	Datatype	Semantics
patientId	HLAASCIIstring	patientId associates a particular patient to a particular Communications document. Once a patient ID is assigned to a document, the ID is static and cannot be changed or reused during an execution.
a_event	EventRecord	Event section of the 4700.
a_nineLine	NineLineRecord	9-line section of the 4700.
a_traumaMistDiagnosis	TraumaMechanismInjurySymtomsTreatmentDiagnosisRecord	The Trauma Mist Report / Disease Diagnosis section of the 4700.
a_pickupDropoff	PickupDropoffRecord	Pickup and Dropoff sections of the 4700.
a_capability	CapabilityRecord	Mark an 'X' for each capability present for this patient/mission. If 'Other', record the other capability present.
a_patientIdentification	PatientIdentificationRecord	Bottom section of all three pages of the 4700.
a_preparedBy	PreparedByRecord	Information about the person preparing the DA4700.
b_hemorrhageControl	HemorrhageControlRecord	Describe the type of dressing or direct pressure used to control hemorrhage.
b_priorTourniquetAssessTighten	PriorTourniquetRecord	document whether prior tourniquets are assessed or tightened.
b_extremityTourniquetsApplied	TourniquetArray	Record tourniquets applied to extremities.
b_junctionalTourniquetApplied	JunctionalTourniquetRecord	Record junctional tourniquet if applied.
b_tourniquetComment	HLAASCIIstring	Record clarifying notes for tourniquets.
c_airwayTreatmentType	AirwayTreatmentTypeRecord	Mark an 'X' for all types of airway treatment given. Self (none, patient breathes without assistance), NPA (nasopharyngeal airway), OPA (oropharyngeal airway), Cric (cricothyroidotomy), Trach (tracheotomy), ETT (endotracheal tube), SGA (supraglottic airway). Type. Record type of supraglottic airway treatment.
c_airwayTube	AirwayTubeRecord	Size. Record the size of tube. Pos __ @ ___. Record the position (first blank) and select the Gums, Nare, or Teeth (second blank) from the dropdown list.
c_airwayConfirmation	AirwayConfirmationRecord	Mark an 'X' for all methods used to confirm breathing, BS (breath sounds), Vis (visualization/chest rise), ETCO2 (End Tidal CO2 device).
c_airwayO2Source	AirwayO2SourceRecord	Mark an 'X' for all sources used to deliver oxygen, NC (nasal cannula and nasal catheters), NRB (non-rebreather mask), BVM (bag valve mask), Vent (mechanical ventilator). LPM. Record flow of oxygen in liters per minute.

c_airwayIntubated	AirwayIntubatedRecord	Mark an ‘X’ for Prior to transport (intubation occurred prior to transport); By transport crew (intubation occurred during transport).
c_airwaySuction	AirwaySuctionRecord	Mark an ‘X’ for ETT (Endotracheal tube), Yaunker (Oral suction tube).
d_needleDecompression	BreathingNeedleDecompressionArray	DA4700 allows four records for needle decompression.
d_chestTube	BreathingChestTubeRecord	Time. Record 24-hour time of chest tube insertion in the same time zone as marked in ‘Time Zone’ above. Mark an ‘X’ for R (right) and/or L (left) chest tube location.
d_chestEqualRiseAndFall	BreathingRiseFallRecord	Mark a ‘□’for Y (yes), N (no) or N/A (not applicable) of equal chest rise and fall.
d_respiratoryEffort	BreathingRespiratoryEffortRecord	Mark an ‘X’ for Unlabored, Labored, Agonal, and Assisted respiratory effort.
d_ventSettings	BreathingVentSettingsArray	DA4700 allows up to 4 readings. One initial and three changes.
e_annotateInjuries	AnnotateInjuriesArray	A dynamic length array associating injuries with body locations per the DA4700 Annotate Injuries section.
f_rhythymEctopy	CirculationAssessmentRhythymEctopyRecord	Document any cardiac rhythym irregularities.
f_pulse	CirculationAssessmentPulsesRecord	Select A, D, +1, +2, +3 from the dropdown list for RAD, BRAC, CAR, FEM, PED, TEMP.
g_transfusionIndication	TransfusionIndicationRecord	Mark an ‘X’ to indicate the reason for the transfusion: Amputation, HR (heart rate) > 120, SBP (systolic blood pressure) < 90.
g_bloodIinfusion	BloodInfusionArray	Record up to two blood infusions.
g_intravenousPeripheral	IntravenousPeripheralRecord	Peripheral. Mark an ‘X’ for R (right), L (left) Hand; R (right), L (left) Arm; R (right), L (left) EJ (external jugular) of all intravenous line sites. Record the gauge of all lines.
g_intraosseousType	IntraosseousTypeRecord	Record the type of Intraosseous line used.
g_intraosseousSite	IntraosseousSiteRecord	Record the site of the Intraosseous injection.
g_centralLine	IntravenousCentralLineRecord	Identify any IV Central Line and location the insertion is made.
g_arterialLine	IntravenousArterialLine Record	Arterial Line. Mark an ‘X’ for R (right), L (left) Wrist; R (right), L (left) Groin sites.
h_vitalSigns	VitalSignsArray	Patient vital signs may be taken and recorded up to 4 times.
h_eyeAssessment	EyeAssessmentRecord	Use PERRLA assessment.

h_fieldUltrasoundResults	HLAASCIIstring	Record ultrasound results.
h_otherDiagnostics	HLAASCIIstring	Record any other diagnostic results not otherwise specified.
i_foley	FoleyRecord	Document application of Foley catheter.
i_gastricTube	GastricTubeRecord	Record oral or nasal gastric tube intervention.
i_eyeProtection	EyeProtectionRecord	Document eye protection application to the injured patient. Not to be confused with Eye Protection in Casualty's Protective Equipment which refers to eye protection worn by the injured patient WHEN THE INJURY WAS INFLICTED.
i_immobilization	ImmobilizationRecord	Document any immobilization devices administered to the patient.
i_warming	WarmingArray	Document any hypothermia prevention intervention(s). Up to two may be documented.
i_otherInterventions	OtherInterventionsArray	Document other interventions not specified earlier. Up to two other interventions are allowed in the 4700.
j_medicationsAndFluids	MedicationsAndFluidsArray	Array of entries for medications and fluids administered to the patient.
k_documentsReceived	DocumentsReceivedRecord	Mark an 'X' for all documents received with the patient. TCCC (TCCC, DD1380 Tactical Combat Casualty Care Card), Patient Chart, None. If Other documentation was received, record the type, document title and/or description.
k_narrativeSummaryOfCare	HLAASCIIstring	Record a summary of the care provided for the medical record. Do not include items documented previously. Do not include classified information.
k_enrouteCareProvider	EnrouteCareProviderArray	Document care providers for enroute care. Note on the electronic form: Signature locks and prevents edits to Provider Name information.
k_casualtyProtectiveEquipment	CasualtyProtectiveEquipmentRecord	Mark "X" for any protective equipment worn by the patient at the time of injury. Important for after action analysis to determine if injured patient was actually wearing appropriate protective equipment. This does not represent any protective equipment placed on the patient AFTER injury to protect or treat the patient.
l_eventDate	HLAASCIIstring	Event date that the AAR is discussing.
l_tacticalComplications	HLAboolean	Mark "X" if the tactical situation complicated patient care. Explain how in the following discussion section.
l_discussion	HLAASCIIstring	Discussion section.
l_sustains	HLAASCIIstring	Sustains section.
l_improves	HLAASCIIstring	Improves section.

8.2.12. ProlongedFieldCareCard

HLAobjectRoot.ProlongedFieldCareCard

Prolonged Field Care (PFC) card used to document patient data during prolonged field care. (Version v22 10 June 2019)

Attribute	Datatype	Semantics
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
header	PFC_HeaderRecord	Header section of PFC card
sample	PFC_SampleRecord	<S>igns/symptoms; <A>llergies; <M>edications; <P>ast Medical History; <L>ast oral intake; <E>vents leading to injury
annotateInjuries	PFC_InjuryTreatmentAnnotationArray	
mistReport	PFC_MistReportRecord	MIST report
tourniquet	PFC_TourniquetArray	PFC supports recording four tourniquets. Time On and Time Converted are recorded.
tranexamicAcid	PFC_TranexamicAcidRecord	PFC supports recording two dosings of TXA times.
bloodAnalysis	PFC_BloodAnalysisArray	Array of blood analysis tests
notes	HLAASCIIstring	Notes, telemedicine recommendation /red flags and Standing Orders:
flowsheet	PFC_FlowsheetArray	33 element array of flowsheet records for the PFC card
treatmentChecklist	PFC_TreatmentChecklistRecord	Treatment checklist

8.2.13. Document

HLAobjectRoot.Document

Representation of a document in various formats. Stored as a byte array. To write out the file, use "documentName" + extension identified by documentTypeEnum

Attribute	Datatype	Semantics
documentName	HLAASCIIstring	filename of the document being stored
patientId	HLAASCIIstring	patientId uniquely identifies a patient. Once a Patient object is created, the ID is static and cannot be changed or reused during an execution.
documentType	DocumentTypeEnum	Type of file being represented. Indicates the file extension if the file is to be written out.
documentBody	documentBodyArray	Byte array to store the body of the file.

8.3. Interaction Classes

8.3.1. CommandControl

HLAinteractionRoot.CommandControl
C2 messages / Radio

8.3.2. MedevacRequest

HLAinteractionRoot.CommandControl.MedevacRequest
9-line call.

Parameter	Datatype	Semantics
line1	HLAASCIIstring	Location at pickup site in grid coordinates
line2	HLAASCIIstring	Radio Frequency, call sign and suffix
line3	HLAASCIIstring	Number of patients by precedence A-URGENT B-URGENT-SURG C-PRIORITY D-ROUTINE E-CONVENIENCE If 2 or more categories must be reported in the same request, insert the word "BREAK" between each category
line4	HLAASCIIstring	Special equipment required A-NONE B-HOIST C-EXTRACTION EQUIPMENT D-VENTILATOR
line5	HLAASCIIstring	Number of patients by type <L>itter/<A>mbulatory If both types are requested, insert the word "BREAK" between them.
line6	HLAASCIIstring	NATO: Security at Pickup Zone (PZ) US: Wartime: Security at Pickup Zone (PZ) Peacetime: Number and type of wound, injury or illness.

line7	HLAASCIIstring	Pickup Zone (PZ) Marking Methods A-Panels B-Pyro C-Smoke D-None E-Other (explain)
line8	HLAASCIIstring	Number of patients by nationality. Number of patients in each category need not be transmitted US 9 liner ---------- A - US Military B - US Citizen C - Non-US Military D - Non-US Citizen E - Enemy POW NATO 9 liner ---------- A - Coalition Military B - Civilian with Coalition Forces C - Non-Coalition Security Forces D - Non-Coalition Civilian E - Opposing Forces/PW/Detainee F - Child
line9	HLAASCIIstring	US - Wartime: Chem Bio Radiological contamination (include ONLY when applicable) C-Chemical B-Biological R-Radiological N-Nuclear US - Peacetime: Terrain Description. Terrain features in and around proposed landing site. If possible, describe relationship of site to prominent terrain feature. NATO: Pickup Zone Terrain/Obstacles
audioStream	HLAASCIIstring	If a 9 liner message is sent from a pre-recorded or live audio stream, this variable will be used.

8.3.3. MISTReport

HLAinteractionRoot.MISTReport
MIST:
Mechanism of Injury (GSW, RPG, IED, etc.)
Injuries sustained (Bilateral leg amputation, penetrating trauma to the face etc.)
Give this in PMARCHP order so that nothing is missed
Signs & Symptoms (BP, respiratory rate, HR etc.)

Treatments rendered (Right arm splinted, TQs applied to both legs etc.)

Parameter	Datatype	Semantics
mechanism	HLAASCIIstring	Mechanism of injury and at what time if known
injury	HLAASCIIstring	Injury or illness sustained
signs	HLAASCIIstring	Symptoms and vital signs A - Airway B - Breathing Rate C - Pulse Rate D - Conscious/unconscious E - Other signs/symptoms
treatment	HLAASCIIstring	Treatment Given (e.g. tourniquet and time applied, medications)

8.4. Datatypes

8.4.1. Enumerated Datatypes

8.4.1.1. PatientCategoryEnum

Representation: HLAinteger32BE

Enumerator	Value
unitedStatesArmy	1
unitedStatesAirForce	2
UnitedStatesMarineCorps	3
unitedStatesNavy	4
unitedStatesCoastGuard	5
unitedStatesPublicHealthService	6
civilianLocal	7
civilianOther	8
contractor	9
enemyPrisonerOfWar	10
natoCoaltion	11
nonNatoCoalition	12
other	13

8.4.1.2. AllergyTypesEnum

Representation: HLAinteger32BE

Enumerator	Value
noKnownDrugAllergies	1
opiates	2
penicillin	3
sulphur	4
other	5

8.4.1.3. AirwayTubeLocationEnum

Gums - Teeth missing, Blast, infant, elderly
Nare - nostril. Medic would likely annotate which nostril
Teeth - between teeth

Representation: HLAinteger32BE

Enumerator	Value
gums	1
nare	2
teeth	3

8.4.1.4. CentralLineLocationEnum

Fem-R, Right Femoral Vein (groin)
Fem L, Left Femoral Vein (groin)
IJ-R, Right Internal Jugular Central Venous Line
IJ-L, Left Internal Jugular Central Venous Line
Subclav-R, Right Subclavian Central Venous Catheter
Subclav-L, Left Subclavian Central Venous Catheter

Representation: HLAinteger32BE

Enumerator	Value
rightFemoralVein	1
leftFemoralVein	2
rightInternalJugularVein	3
leftInternalJugularVein	4
rightSubclavianCentralVein	5
leftSubclavianCentralVein	6

8.4.1.5. BloodComponentEnum

FDP - Fresh Dried Plasma
FFP - Fresh Frozen Plasma

PRBC - Packed Red Blood Cells.

Representation: HLAinteger32BE

Enumerator	Value
freshDriedPlasma	1
freshFrozenPlasma	2
packedRedBloodCells	3
wholeBlood	4

8.4.1.6. EnrouteCareProviderCapabilityEnum

none [left blank]
EMT-B[asic]
EMT-I[ntermediate]
EMT-P[aramedic]
EMT-FPC [Certified Flight Paramedic]
RN Registered Nurse,
CRNA [certified registered nurse anesthetist (CRNA)]
PA [physicians assistant]
MD/DO [Medical Doctor (MD) and Doctor of Osteopathy (DO)]

Representation: HLAinteger32BE

Enumerator	Value
none	0
basicEmergencyMedicalTechnician	1
intermediateEmergencyMedicalTechnician	2
paramedicEmergencyMedicalTechnician	3
certifiedFlightParamedicEmergencyMedicalTechnician	4
registeredNurse	5
certifiedRegisteredNurseAnesthetist	6
physiciansAssistant	7
medicalDoctor	8

8.4.1.7. InjuriesTypeEnum

Enumerate the injuries that can be used in the Annotate Injures section of the DA4700

(AMP)utation
(C)repitus
(D)eformity
(DG)Degloving
(FX)Fracture
(GSW)Gunshot Wound
(H)ematoma
(LAC)eration
(PW)Puncture Wound
(PP)Peppering
(TBI)Suspect

Other
(B)urn % TBSA
(E)cchymosis
(BL)eeding
(IMP)Impaled Object
(P)ain
(SQA)Subcutaneous Air

Representation: HLAinteger32BE

Enumerator	Value
amputation	1
bleeding	2
burn	3
crepitus	4
deformity	5
degloving	6
ecchymosis	7
fracture	8
gunShotWound	9
hematoma	10
impaledObject	11
laceration	12
pain	13
peppering	14
punctureWound	15
subcutaneousAir	16
traumaticBrainInjury	17
other	18

8.4.1.8. MedicineRouteEnum

[DA4700]
Medications and Fluids section
Enumeration of the route of medicine administration:
IM - Intramuscular
IN - Inhalation
IO - Intraosseus
IV - Intravenous
PO - Oral
PR - Rectal
SL - Sub-lingual
SQ - Subcutaneous

Representation: HLAinteger32BE

Enumerator	Value

intramuscular	1
inhalation	2
intraosseus	3
intravenous	4
oral	5
rectal	6
sublingual	7
subcutaneous	8

8.4.1.9. EvacuationCategoryEnum

[DD1380] [DA4700]

Category of evacuation

Representation: HLAinteger32BE

Enumerator	Value
urgent	1
priority	2
routine	3

8.4.1.10. TimeZoneEnum

Local or Zulu Timezones

Representation: HLAinteger32BE

Enumerator	Value
local	1
zulu	2

8.4.1.11. MechanismOfInjuryEnum

[DA4700]
Select the dominant/primary Mechanism of injury from the dropdown list. If more than one Mechanism, specify additional mechanisms in Comments.

Representation: HLAinteger32BE

Enumerator	Value
aircraftCrash	1
blast_IED_MineDismounted	2
blast_IED_MineMounted	3

blast_IndirectFire	4
blast_RPGGrenade	5
blast_Other	6
blunt	7
burn	8
collapseCrush	9
diseaseIllness	10
drowning	11
environmental	12
fall	13
fragmentation	14
gunshotWound	15
motorVehicleCrash	16
parachuteIncident	17
other	18

8.4.1.12. InjuryEnum

[DA4700]
Used in the Trauma MIST Report Section.

Representation: HLAinteger32BE

Enumerator	Value
amputation	1
burn	2
crepitus	3
deformity	4
degloving	5
diseaseIllness	6
fracture	7
gunshotWound	8
hematoma	9
laceration	10
peppering	11
punctureWound	12
tbiSuspect	13
other	14

8.4.1.13. PickupRoleEnum

DA4700.

Representation: HLAinteger32BE

Enumerator	Value
role_1-POI	1
role_1-aidStation	2
role_2	3
role_3	4
role_4	5
Other	6

8.4.1.14. DropoffRoleEnum

DA4700.

Representation: HLAinteger32BE

Enumerator	Value
role_1-aidStation	1
role_2	2
role_3	3
role_4	4
Other	5

8.4.1.15. LevelOfAlertnessEnum

[DA4700]
component of Vital Signs section

Representation: HLAinteger32BE

Enumerator	Value
alert	1
verbal	2
pain	3
unresponsive	4

8.4.1.16. TemperatureTypeEnum

Scale used to measure temperature

Representation: HLAinteger32BE

Enumerator	Value
celsius	1
farenheit	2

8.4.1.17. AirwayTubePositionEnum

Representation: HLAinteger32BE

Enumerator	Value
oral	1
nasal	2
cricothyroid	3

8.4.1.18. DocumentTypeEnum

Identify the file type extension for a document being represented

Representation: HLAinteger32BE

Enumerator	Value
unknown	0
pdf	1
txt	2
xls	3
jpg	4
png	5

8.4.2. Array Datatypes

Name	Element datatype	Cardinality	Encoding	Semantics
BreathingNeedleDecompressionArray	BreathingNeedleDecompressionRecord	4	HLAfixedArray	[DA4700] Needle Decompression section allows for four entries of Needle Decompression
BreathingVentSettingsArray	BreathingVentSettingsRecord	4	HLAfixedArray	[DA4700] The DA4700 has four entries, Initial and three changes
SignsSymptomsArray	SignsSymptomsRecord	4	HLAfixedArray	[DD1380] allows four entries in the form for signs and symptoms.

TreatmentFluidArray	TreatmentFluidRecord	2	HLAfixedArray	[DA 1380] allows for two entries for fluids administered.
TreatmentMedicationsAnalgesicArray	TreatmentMedicationsRecord	3	HLAfixedArray	[DD1380] allows for three dosages of analgesics
TreatmentMedicationsAntibioticsArray	TreatmentMedicationsRecord	2	HLAfixedArray	[DD1380] allows for two types of antibiotics to be administered
treatmentMedicationsOtherArray	TreatmentMedicationsRecord	2	HLAfixedArray	[DD1380] allows for two meds (not analgesic or antibiotic) to be administered.
BloodInfusionArray	BloodInfusionRecord	2	HLAfixedArray	[DA4700] allows two blood infusion records
VitalSignsArray	VitalSignsRecord	4	HLAfixedArray	[DA4700] Records of patient vital signs taken at (up to) 4 different times.
WarmingArray	WarmingRecord	2	HLAfixedArray	[DA4700] Array of hypothermia prevention interventions. Form allows two.
OtherInterventionsArray	OtherInterventionsRecord	2	HLAfixedArray	[DA4700] Array of other interventions not otherwise specified. 4700 allows two.
TourniquetArray	ExtremityTourniquetRecord	4	HLAfixedArray	[DD1380] Document up to four extremity tourniquet applied
EnrouteCareProviderArray	EnrouteCareProviderRecord	2	HLAfixedArray	[DA4700] List (up to two) Care Providers who provided assistance in patient care while enroute. NOTE: Signature locks and prevents edits to Provider Name information.
AnnotateInjuriesArray	AnnotateInjuriesRecord	Dynamic	HLAvariableArray	[DA4700] A dynamic length array of Injury/InjuryLocation records for the Annotate Injuries section
MedicationsAndFluidsArray	MedicationsAndFluidsRecord	12	HLAfixedArray	[DA4700] up to 12 entries for the Medications and Fluids section
InjuryLocationArray	InjuryLocationRecord	Dynamic	HLAvariableArray	[DD1380] Array of injury and physical body location associations
PFC_TourniquetArray	PFC_TourniquetRecord	4	HLAfixedArray	[PFC] PFC record for up to four tourniquets applied and converted

PFC_FlowsheetArray	PFC_FlowsheetRecord	33	HLAfixedArray	[PFC] Array of flowsheet records for the PFC flowsheet array.
PFC_BloodAnalysisArray	PFC_BloodAnalysisRecord	6	HLAfixedArray	[PFC] Blood Analysis section of the PFC. Allows 6 readings.
PFC_InjuryTreatmentAnnotationArray	PFC_InjuryTreatmentAnnotationRecord	Dynamic	HLAvariableArray	[PFC] Dynamic array of injury location/description/treatment entries
documentBodyArray	HLAbyte	Dynamic	HLAvariableArray	A dynamic length byte array of maximum 250 MB. Byte array is used to store the bytes of the document body.

8.4.3. Fixed Record Datatypes

8.4.3.1. CapabilityRecord

[DA4700]
Mark an 'X' for each capability present for this patient/mission. If 'Other', record the other capability present.
EMT-I[ntermediate]
EMT-P[aramedic]
EMT-FPC [Certified Flight Paramedic]
RN Registered Nurse,
CRNA [certified registered nurse anesthetist (CRNA)]
PA [physicians assistant]
MD/DO [Medical Doctor (MD) and Doctor of Osteopathy (DO)]

Encoding: HLAfixedRecord

Name	Datatype	Semantics
basicEmergencyMedicalTechnician	HLAboolean	false = No true = Yes
intermediateEmergencyMedicalTechnician	HLAboolean	false = No true = Yes
paramedicEmergencyMedicalTechnician	HLAboolean	false = No true = Yes
certifiedFlightParamedicEmergencyMedicalTechnician	HLAboolean	false = No true = Yes
registeredNurse	HLAboolean	false = No true = Yes
certifiedRegisteredNurseAnesthetist	HLAboolean	false = No true = Yes
physiciansAssistant	HLAboolean	false = No true = Yes
medicalDoctor	HLAboolean	false = No true = Yes

otherCapability	HLAASCIIstring	If ‘Other’, record the other capability present.

8.4.3.2. HemorrhageControlRecord

[DA4700]
Mark an ‘X’ for each type of dressing used to control bleeding. If ‘Other’ type of dressing, record the type.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
directPressure	HLAboolean	false = No true = Yes
hemostaticDressing	HLAboolean	false = No true = Yes
kerlixDressing	HLAboolean	false = No true = Yes
pressureDressing	HLAboolean	false = No true = Yes
otherType	HLAASCIIstring	If "Other", the type of dressing is recorded here.

8.4.3.3. AirwayTreatmentTypeRecord

[DA4700]
Mark an ‘X’ for all types of airway treatment given.
Self (none, patient breathes without assistance), NPA (nasopharyngeal airway), OPA (oropharyngeal airway), Cric (cricothyroidotomy), Trach (tracheotomy), ETT (endotracheal tube), SGA (supraglottic airway).
Type. Record type of supraglottic airway treatment.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
breathesWithoutAssistance	HLAboolean	False = unchecked True = checked
nasopharyngealAirway	HLAboolean	False = unchecked True = checked
oropharyngealAirway	HLAboolean	False = unchecked True = checked
cricothyroidotomy	HLAboolean	False = unchecked True = checked
tracheotomy	HLAboolean	False = unchecked True = checked
endotrachealTube	HLAboolean	False = unchecked True = checked
supraglotticAirway	HLAboolean	False = unchecked True = checked

supraglotticAirwayType	HLAASCIIstring	Record type of supraglottic airway treatment.

8.4.3.4. AirwayConfirmationRecord

[DA4700]
Mark an 'X' for all methods used to confirm breathing, BS (breath sounds), Vis (visualization/chest rise), ETCO2 (End Tidal CO2 device).

False = unchecked
True = checked

Encoding: HLAfixedRecord

Name	Datatype	Semantics
breathSounds	HLAboolean	Airway confirmation by Breath Sounds
visualSigns	HLAboolean	Airway Confirmation by Visual signs (visualization / chest rise)
endTidalCarbonDioxide	HLAboolean	Airway confirmation by End Tidal CO2 device

8.4.3.5. AirwayTubeRecord

[DA4700]
Size. Record the size of tube.
Pos __ @ ___. Record the position (first blank) and select the Gums, Nare, or Teeth (second blank) from the dropdown list.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
size	FloatType32BE	Size of tube in mm
position	AirwayTubePositionEnum	Oral, Nasal or cricothyroid (throat)
tubeInsertionLocation	AirwayTubeLocationEnum	Select from dropdown list

8.4.3.6. AirwayO2SourceRecord

DA4700.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
nasalCannulaAndCatheter	HLAboolean	Nasal Cannula and Nasal catheters False = unchecked True = checked
nonRebreatherMask	HLAboolean	Non-rebreather mask False = unchecked True = checked

bagValveMask	HLAboolean	Bag valve mask. False = unchecked True = checked
mechanicalVentilator	HLAboolean	Mechanical Ventilator. False = unchecked True = checked
litersPerMinute	Integer32BE	Record flow of oxygen in liters per minute.

8.4.3.7. AirwayIntubatedRecord

[DA4700]
Mark an ‘X’ for Prior to transport (intubation occurred prior to transport); By transport crew (intubation occurred during transport)

Encoding: HLAfixedRecord

Name	Datatype	Semantics
priorToTransport	HLAboolean	False = unchecked True = checked
byTransportCrew	HLAboolean	False = unchecked True = checked

8.4.3.8. AirwaySuctionRecord

[DA4700]
Mark an ‘X’ for ETT (Endotracheal tube), Yankauer (Oral suction tube).

Encoding: HLAfixedRecord

Name	Datatype	Semantics
endoTrachealTube	HLAboolean	ETT - Endotracheal tube False = unchecked True = checked
yankauer	HLAboolean	yankauer Oral Suction Tube False = unchecked True = checked

8.4.3.9. BreathingNeedleDecompressionRecord

[DA4700]
Time. Record 24-hour time of all needle decompressions (ND) in the same time zone as marked in ‘Time Zone’ above.
Mark an ‘X’ for R (right), L (left), Mid ax (mid axillary), Mid clav (mid clavicle) locations of NDs.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Format HH:MM in the same timezone marked in the TZ above
right	HLAboolean	Mark X for Right false = unchecked true = checked
left	HLAboolean	Mark X for Left false = unchecked true = checked
midAxillary	HLAboolean	Mark X for Mid Axillary false = unchecked true = checked
midClavicle	HLAboolean	Mark X for Mid Clavicle false = unchecked true = checked

8.4.3.10. BreathingChestTubeRecord

[DA4700]
Time. Record 24-hour time of chest tube insertion in the same time zone as marked in ‘Time Zone’ above.
Mark an ‘X’ for R (right) and/or L (left) chest tube location.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Format HH:MM in the same timezone marked in the TZ above
right	HLAboolean	Mark an 'X' for Right chest tube location False = unchecked True = checked
left	HLAboolean	Mark an 'X' for Left chest tube location False = unchecked True = checked

8.4.3.11. BreathingRiseFallRecord

[DA4700]
Select radio button for Y (yes), N (no) or N/A (not applicable) of equal chest rise and fall.

Radio Buttons, only one can be selected.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
yes	HLAboolean	Select for Yes "Chest Equal Rise and Fall" False = unselected True = selected
no	HLAboolean	Select for No "Chest Equal Rise and Fall" False = unselected True = selected
notApplicable	HLAboolean	Select for N/A "Chest Equal Rise and Fall" False = unselected True = selected

8.4.3.12. BreathingVentSettingsRecord

[DA4700]
Time. Record 24-hour time of initial and subsequent vent settings in the same time zone as marked in ‘Time Zone’ above. Record initial and subsequent vent setting values for Mode, Rate, TV, FiO2, PEEP, PIP and ETCO2.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Time. Record 24-hour time of initial and subsequent vent settings in the same time zone as marked in ‘Time Zone’ above.
mode	HLAASCIIstring	Record initial and subsequent vent setting values for Mode. Mode: Assist Control (AC) or ASV (Hamilton T1 only) - source SMOG 2020
rate	HLAASCIIstring	Record initial and subsequent vent setting values for Rate.
tidalVolume	HLAASCIIstring	Record initial and subsequent vent setting values for TV (Tidal Volume).
inspiredOxygenFraction	HLAASCIIstring	Record initial and subsequent vent setting values for FiO2. inspired oxygen fraction (FIO2).
positiveEndExpiratoryPressure	HLAASCIIstring	Record initial and subsequent vent setting values for PEEP. Positive end-expiratory pressure (PEEP).
peakInspiratoryPressure	HLAASCIIstring	Record initial and subsequent vent setting values for PIP. PIP = peak inspiratory pressure.
endTidalCarbonDioxide	HLAASCIIstring	Record initial and subsequent vent setting values for ETCO2 (End-Tidal Carbon Dioxide).

8.4.3.13. BreathingRespiratoryEffortRecord

[DA4700]
Mark an ‘X’ for Unlabored, Labored, Agonal, and Assisted respiratory effort.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
unlabored	HLAboolean	false = unchecked true = checked
labored	HLAboolean	false = unchecked true = checked
agonal	HLAboolean	false = unchecked true = checked
assisted	HLAboolean	false = unchecked true = checked

8.4.3.14. MechanismOfInjuryRecord

[DD1380]
Mark an “X” on the mechanism or cause of injury (artillery, blunt, burn, fall, grenade, gunshot wound (GSW), improvised explosive device (IED), landmine, motor vehicle crash/collision (MVC), rocket-propelled grenade (RPG), other (specify)). Mark all that apply.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
artillery	HLAboolean	False = unchecked True = checked
blunt	HLAboolean	False = unchecked True = checked
burn	HLAboolean	False = unchecked True = checked
fall	HLAboolean	False = unchecked True = checked
grenade	HLAboolean	False = unchecked True = checked
gunShotWound	HLAboolean	False = unchecked True = checked
improvisedExplosiveDevice	HLAboolean	False = unchecked True = checked
landMine	HLAboolean	False = unchecked True = checked
motorVehicleCollision	HLAboolean	False = unchecked True = checked

rocketPropelledGrenade	HLAboolean	False = unchecked True = checked
other	HLAboolean	False = unchecked True = checked If checked, fill in blank
otherCause	HLAASCIIstring	If "Other" is checked, list the mechanism of injury here.

8.4.3.15. SignsSymptomsRecord

[DD1380]
single reading of vitals. The medic fills these values from an assessment of the patient. While the Physiology class populated by the physiology engine is "ground truth", these values are the "perceived truth" as measured by the medic.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Time vitals were taken HH:MM format
pulse	HLAASCIIstring	Rate and Location.
systolicBloodPressure	Integer32BE	Systolic Blood Pressure represented as an integer
diastolicBloodPressure	Integer32BE	Diastolic Blood Pressure represented as an integer.
respiratoryRate	Integer32BE	Breaths per minute
pulseOxO2aturation	Integer32BE	pulseOxO2Saturation.
alertnessLevel	HLAASCIIchar	Character A,V,P or U representing the highest Level of Alertness A - <A>lert V - Responds to <V>erbal stimulus P - Responds to <P>ain stimulus U - <U>nresponsive
painScale	Integer32BE	Drop down list of pain scales 0-10 integer.

8.4.3.16. TreatmentCirculatoryTourniquetRecord

[DD1380]
A single record of a tourniquet application.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
extremity	HLAboolean	Extremity tourniquet applied
extremityType	HLAASCIIstring	Type of extremity tourniquet applied
junctional	HLAboolean	Junctional tourniquet applied

junctionalType	HLAASCIIstring	Type of junctional tourniquet applied
truncal	HLAboolean	Truncal tourniquet applied (pressure dressing)
truncalType	HLAASCIIstring	Type of truncal tourniquet/pressure dressing applied.

8.4.3.17. TreatmentCirculatoryDressingRecord

[DD1380]
Type of circulatory dressing

Encoding: HLAfixedRecord

Name	Datatype	Semantics
hemostatic	HLAboolean	Hemostatic dressing applied
pressure	HLAboolean	Pressure dressing applied
other	HLAboolean	Other dressing applied (Describe in otherType attribute)
otherType	HLAASCIIstring	Type of dressing applied

8.4.3.18. TreatmentAirwayRecord

[DD1380]
Record of a single set of data for the airway section of the DD 1380

Encoding: HLAfixedRecord

Name	Datatype	Semantics
intact	HLAboolean	Airway is intact.
nasopharyngealAirway	HLAboolean	NPA (nasopharyngeal airway)
cricothyroidotomy	HLAboolean	CRIC (cricothyroidotomy)
endotrachealTube	HLAboolean	ET Tube (endotracheal tube)
supraglotticAirway	HLAboolean	SGA (supraglottic airway)
type	HLAASCIIstring	describe type of device(s) used

8.4.3.19. TreatmentBreathingRecord

[DD1380]
Record of a single reading of breathing treatment

Encoding: HLAfixedRecord

Name	Datatype	Semantics
oxygenAdministered	HLAboolean	O2 - Oxygen administered
needleDecompression	HLAboolean	Needle-D (needle decompression)
chestTube	HLAboolean	Chest-Tube
chestSeal	HLAboolean	Chest-Seal

type	HLAASCIIstring	Write type of device(s) used

8.4.3.20. TreatmentFluidRecord

[DD1380]
Record of fluids administered

Encoding: HLAfixedRecord

Name	Datatype	Semantics
name	HLAASCIIstring	Name of fluid administered
volume	Integer32BE	Volume units in milliliters/mL.
route	HLAASCIIstring	IV vs IO. NOTE: Could be a record.
time	HLAASCIIstring	HH:MM:SS 24 hour format

8.4.3.21. TreatmentMedicationsRecord

[DD1380]
Record of a Med being administered. May be analgesic, antibiotic or other.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
name	HLAASCIIstring	Patient Name in format last, first
dosage	HLAASCIIstring	Dosage in appropriate units
route	HLAASCIIstring	Route of meds administration.
time	HLAASCIIstring	Format HH:MM:SS PM/AM

8.4.3.22. TreatmentOtherRecord

[DD1380]
Mark an "X" for other treatments administered (combat pill pack, eye shield (mark right (R) or left (L)), splint, hypothermia prevention) and type of device(s) used.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
combatPill	HLAboolean	True if pill administered. Describe in Type
hypothermiaBlanket	HLAboolean	True if blanket used to treat hypothermia
eyeShieldRight	HLAboolean	True if eye shield administered to right eye
eyeShieldLeft	HLAboolean	True if eye shield administered to the left eye
splint	HLAboolean	True if splint administered. Describe in type

type	HLAASCIIstring	Used to describe type of pill administered, eye shield used or splint administered.

8.4.3.23. ResponderRecord

[DD1380]
Information about the first responder.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
lastName	HLAASCIIstring	Last name of first responder
firstName	HLAASCIIstring	First name of first responder
trainingLevel	HLAASCIIstring	All medical providers should indicate their level of training after their name (e.g. CCFP, RN, APA/ANP, MD/DO
socialSecurityAccountNumber	HLAASCIIstring	Last 4 of provider's SSAN

8.4.3.24. CirculationAssessmentRhythymEctopyRecord

[DA4700]
Mark an ‘X’ for NSR (normal sinus rhythm), SVT (supraventricular tachycardia), ST (sinus tachycardia), VT (ventricular tachyarrhythmias), SB (sinus bradycardia), VF (ventricular fibrillation), PEA (pulseless electrical activity), Paced, Asystole, A-Fib (atrial fibrillation), A-FLUT (atrial flutter) of heart rhythm/ectopy.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
normalSinusRhythm	HLAboolean	Mark 'X' for normal sinus rhythm NSR
supraventricularTachycardia	HLAboolean	Mark 'X' for supraventricular tachycardia (SVT)
sinusTachycardia	HLAboolean	Mark 'X' for sinus tachycardia (ST)
ventricularTachyarrhythmias	HLAboolean	Mark 'X' for ventricular tachyarrhythmias (VT)
sinusBradycardia	HLAboolean	Mark 'X' for sinus bradycardia (SB)
ventricularFibrillation	HLAboolean	Mark 'X' for ventricular fibrillation (VF)
pulselessElectricalActivity	HLAboolean	Mark 'X' for pulseless electrical activity (PEA)
paced	HLAboolean	Mark 'X' for Paced
asystole	HLAboolean	Mark 'X' for Asystole
atrialFibrillation	HLAboolean	Mark 'X' for atrial fibrillation (A-FIB)
atrialFlutter	HLAboolean	Mark 'X' for atrial flutter (A-FLUT)

8.4.3.25. CirculationAssessmentPulsesRecord

[DA4700]
Locations to take a pulse reading:
RAD/radial/wrist:
BRAC / Brachial / elbow:
CAR / carotid / neck:
FEM / Femoral / upper thigh:
PED / pedal / top of foot:
TEMP / temporal / head:

Select A, D, +1, +2, +3 from the dropdown list for RAD, BRAC, CAR, FEM, PED, TEMP.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
radial	HLAASCIIstring	Select A, D, +1, +2, +3 from the dropdown list
brachial	HLAASCIIstring	Select A, D, +1, +2, +3 from the dropdown list
carotid	HLAASCIIstring	Select A, D, +1, +2, +3 from the dropdown list
femoral	HLAASCIIstring	Select A, D, +1, +2, +3 from the dropdown list
pedal	HLAASCIIstring	Select A, D, +1, +2, +3 from the dropdown list
temporal	HLAASCIIstring	Select A, D, +1, +2, +3 from the dropdown list

8.4.3.26. PreparedByRecord

[DA4700]
Prepared By section

Encoding: HLAfixedRecord

Name	Datatype	Semantics
name	HLAASCIIstring	string name of the person preparing the DA4700
rank	HLAASCIIstring	Rank of the person preparing the DA4700
treatingUnit	HLAASCIIstring	Department/Service/Clinic
date	HLAASCIIstring	Date Da4700 was prepared. Format mmddyyyy.

8.4.3.27. TransfusionIndicationRecord

[DA4700]
Mark an ‘X’ for Amputation, HR (heart rate) > 120, SBP (systolic blood pressure)< 90. Mark all that apply.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
amputation	HLAboolean	Mark an ‘X’ for Amputation. Unchecked = false Default false

heartRate	HLAboolean	Mark an ‘X’ for HR (heart rate) > 120 unchecked = false default false
systolicBloodPressure	HLAboolean	Mark an ‘X’ for SBP (systolic blood pressure)< 90 unchecked = false default false

8.4.3.28. BloodInfusionRecord

[DA4700]

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Record 24-hour time infusion began in the same time zone as marked in ‘Time Zone’ above. Format HH:MM
bloodComponent	BloodComponentEnum	Select the infusion component, FDP (Freeze Dried Plasma), FFP (Fresh Frozen Plasma), PRBC (Packed Red Blood Cells), or Whole Blood from the dropdown list.
bloodType	BloodTypeEnum	Select A+, A-, AB+, AB-. B+, B-, O+, or O- blood type from the dropdown list.
unitNumber	HLAASCIIstring	Record the blood unit number, for example W012014000129P
expirationDate	HLAASCIIstring	Record the blood expiration date. Select date from calendar popup or manually type the date (mmddyyyy). Date auto formats with slashes.
bloodAge	Integer32BE	Record the age of blood - Units measured in days

8.4.3.29. IntravenousPeripheralRecord

[DA4700]

Mark an ‘X’ for R (right), L (left) Hand; R (right), L (left) Arm; R (right), L (left) EJ (external jugular) of all intravenous line sites. Record the gauge of all lines

Encoding: HLAfixedRecord

Name	Datatype	Semantics
leftHand	HLAboolean	Mark "x" if IV peripheral is in the left hand
rightHand	HLAboolean	Mark "x" if IV peripheral is in the right hand

handGauge	Integer32BE	Gauge of the IV
leftArm	HLAboolean	Mark "x" if IV peripheral is in the left arm
rightArm	HLAboolean	Mark "x" if IV peripheral is in the right arm
armGauge	Integer32BE	Gauge of the IV
leftExternalJugular	HLAboolean	Mark "x" if IV peripheral is in the left external jugular
rightExternalJugular	HLAboolean	Mark "x" if IV peripheral is in the right external jugular
externalJugularGauge	Integer32BE	Gauge of the IV

8.4.3.30. IntraosseousTypeRecord

[DA4700]
IO Type
Mark an ‘X’ for Fast-1, EZ IO intraosseous (IO) types used.
If ‘Other’, record the IO type used.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
fast1	HLAboolean	FAST1 Intraosseous IO Infusion System Mark "X" if Fast-1
ezIo	HLAboolean	EZ-IO Intraosseous Infusion System Kit Mark "X" if EX-IO kit is used
other	HLAASCIIstring	If "Other" IO type is used, record it

8.4.3.31. IntraosseousSiteRecord

[DA4700]
Record the body location of the intraosseous line

Encoding: HLAfixedRecord

Name	Datatype	Semantics
rightHumerus	HLAboolean	Mark "X" (true) if IO is in right humerus.
leftHumerus	HLAboolean	Mark "X" (true) if IO is in left humerus.
rightTibia	HLAboolean	Mark "X" (true) if IO is in right tibia.
leftTibia	HLAboolean	Mark "X" (true) if IO is in left tibia
sternum	HLAboolean	Mark "X" (true) if IO is in the sternum.

8.4.3.32. IntravenousCentralLineRecord

[DA4700]
Central Line: Mark an ‘X’ for Triple lumen and/or Cordis central lines.

Locations: Fem-R, Fem L, IJ-R, IJ-L, Subclav-R, Subclav-L site from the dropdown list.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
tripleLumen	HLAboolean	Mark "X" (true) if the central line is a Triple Lumen Default = false
tripleLumenLocation	CentralLineLocationEnum	Location of the triple lumen
cordis	HLAboolean	Mark "X" (true) if the central line is a cordis Default = false
cordisLocation	CentralLineLocationEnum	Location of the CORDIS filter

8.4.3.33. VitalSignsRecord

[DA4700]

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Time. Record 24-hour time (hhmm) vital signs were obtained, in the same time zone as marked in 'Time Zone' page 1. Time auto formats hh:mm.
heartRate	Integer32BE	beats per minute
systolicBloodPressure	Integer32BE	Systolic blood pressure
diastolicBloodPressure	Integer32BE	Diastolic Blood Pressure
respiratoryRate	Integer32BE	breaths per minute
peripheralCapillaryOxygenSaturation	FloatType32BE	SpO2 - peripheral capillary oxygen saturation - oxygen saturation level - expressed as a decimal representing percent (e.g. .83 = 83%)
endTidalCarbonDioxide	Integer32BE	ETCo2 - End Tidal CO2 expressed at mm Hg
temperature	FloatType32BE	expressed as a decimal
temperatureType	TemperatureTypeEnum	"C" Celsius "F" Fahrenheit Radio button in Vital Signs section of DA4700.
levelOfAlertness	LevelOfAlertnessEnum	[DA4700] Character A,V,P or U representing the highest Level of Alertness A - <A>lert V - Responds to <V>erbal stimulus P - Responds to <P>ain stimulus U - <U>nresponsive
glasgowComaScale	GlasgowComaScaleRecord	Glasgow Coma Scale

pain	Integer32BE	Pain scale 0-10 Form has a drop down list but integers are the only options.

8.4.3.34. PupilsEqualRoundReactiveToLightAndAccomodationRecord

[DA4700]
PERRLA Eye assessment Pupils Equal, Round, Reactive to Light and Accommodation

Encoding: HLAfixedRecord

Name	Datatype	Semantics
measured	HLAboolean	mark "X" if a measurement of the eye is taken Mark an 'X' for eye, pupils equal, round, reactive to light and accommodation
size	Integer32BE	record size in mm.

8.4.3.35. FoleyRecord

[DA4700]
Record time, type and comments related to use of a Foley

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Record 24-hour time (hhmm) of each intervention in the same time zone as marked in 'Time Zone' page 1. Time auto formats hh:mm.
comment	HLAASCIIstring	Record comments specific to Foley.

8.4.3.36. EyeProtectionRecord

DA4700]
Record eye protection used and associated comments

Mark an 'X' for Eye Shield, Protective Eyewear and for R (right), L (left) eye.
Record comments specific to eye protection.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Record 24-hour time (hhmm) of each intervention in the same time zone as marked in 'Time Zone' page 1. Time auto formats hh:mm.
eyeShield	HLAboolean	Mark "X" if an eye shield is applied
protectiveEyewear	HLAboolean	Mark "X" if protective eyewear is applied

rightEye	HLAboolean	Mark "X" if protection is applied to the right eye
leftEye	HLAboolean	Mark "X" if protection is applied to the left eye
eyeProtectionComment	HLAASCIIstring	Record any comments related to eye protection applied

8.4.3.37. ImmobilizationRecord

[DA4700]
Mark an ‘X’ for C-Collar, C-Spine, Spine Board, Pelvic Splint, Pelvic Binder and/or Splint. If Pelvic Binder, record the type. If Splint, record type and location

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Time the immobilizer was applied
cervicalCollar	HLAboolean	Mark an ‘X’ if C-Collar applied
cervicalSpine	HLAboolean	Mark an ‘X’ for C-Spine
spineBoard	HLAboolean	Mark an ‘X’ for Spine Board
pelvicSplint	HLAboolean	Mark an ‘X’ for Pelvic Splint
pelvicBinder	HLAboolean	Mark an ‘X’ for Pelvic Binder. If Pelvic Binder, record the type. If Splint, record type and location
pelvicBinderType	HLAASCIIstring	If Pelvic Binder, record the type.
splint	HLAboolean	Mark an ‘X’ for Splint. If Splint, record type and location
splintTypeLocation	HLAASCIIstring	If Splint, record type and location

8.4.3.38. WarmingRecord

[DA4700]
Additional Interventions section
Mark an ‘X’ for hypothermia prevention administered. Record the product type

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Record 24-hour time (hhmm) of each hypothermia prevention in the same time zone as marked in ‘Time Zone’ page 1. Time auto formats hh:mm.
hypothermiaPrevention	HLAboolean	Mark an ‘X’ for hypothermia prevention administration
hypothermiaPreventionProduct	HLAASCIIstring	Record the product type/name

8.4.3.39. OtherInterventionsRecord

[DA4700]
Record other interventions not otherwise specified.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Record 24-hour time (hhmm) of other intervention in the same time zone as marked in ‘Time Zone’ page 1. Time auto formats hh:mm.
otherIntervention	HLAASCIIstring	Record the other intervention

8.4.3.40. GastricTubeRecord

[DA4700]
Gastric Tube section of Additional Interventions

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Record 24-hour time (hhmm) of each intervention in the same time zone as marked in ‘Time Zone’ page 1. Time auto formats hh:mm.
gastricTubeOral	HLAboolean	Mark an ‘X’ for Oral gastric tube
gastricTubeNasal	HLAboolean	Mark an ‘X’ for Nasal gastric tube.
gastricTubeComment	HLAASCIIstring	Record comments specific to gastric tube.

8.4.3.41. PriorTourniquetRecord

[DA4700]
Mark an ‘X’ (Y (yes), N (no), or N/A (not applicable) for previously applied tourniquet assessment/adjustment.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
yes	HLAboolean	Yes, there was a prior tourniquet
no	HLAboolean	no adjustment/assessment of prior tourniquet
notApplicable	HLAboolean	No previously applied tourniquet

8.4.3.42. ExtremityTourniquetRecord

[DA4700]
Extremity Tourniquet.

Encoding: HLAfixedRecord

Name	Datatype	Semantics

time	HLAASCIIstring	Time On. Record 24-hour time (hhmm) of all new tourniquet applications in the same time zone as marked in 'Time Zone' above. Time auto formats hh:mm.
combatApplicationTourniquet	HLAboolean	Mark "X" if Combat Application Tourniquet is applied.
specialOperationsForcesTacticalTourniquet	HLAboolean	Mark "X" if Special Operations Forces Tactical Tourniquet is applied
other	HLAboolean	Mark an 'X' if "Other" type of tourniquet is applied. Describe the type in the comments section
otherTourniquetComment	HLAASCIIstring	If "Other" is marked, record the extremity tourniquet type.
rightUpperExtremity	HLAboolean	Mark an 'X' if tourniquet is applied to RUE (patient's right arm (right upper extremity)
leftUpperExtremity	HLAboolean	Mark an 'X' if tourniquet is applied to LUE, patient's left arm (left upper extremity)
rightLowerExtremity	HLAboolean	Mark an 'X' if tourniquet is applied to LUE patient's left arm (left upper extremity)
leftLowerExtremity	HLAboolean	Mark an 'X' if tourniquet is applied to RLE patient's right leg (right lower extremity)
number	Integer32BE	Record the number of tourniquets applied at the documented 'Time On' time.

8.4.3.43. JunctionalTourniquetRecord

[DA4700]
Junctional Tourniquet.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Time tourniquet is applied. Record hhmm 24 hour time using TimeZone above
abdominalAorticJunctionalTourniquet	HLAboolean	Mark "X" if applying Abdominal Aortic Junctional Tourniquet
combatReadyClamp	HLAboolean	Mark "X" if applying Combat Ready Clamp (CRoC)
junctionalEmergencyTreatmentTool	HLAboolean	Mark "X" if applying Junctional Emergency Treatment Tool (JETT)
SAM	HLAboolean	Mark "X" if applying Junctional tourniquet by SAM Medical Products
other	HLAboolean	Mark "X" if applying other junctional tourniquet. Describe the type in the comment
otherComment	HLAASCIIstring	If "Other Junctional" tourniquet is applied, record the type

number	Integer32BE	Record the number of tourniquets applied at the documented ‘Time On’ time.

8.4.3.44. DocumentsReceivedRecord

[DA4700]
Identify any documents received with the patient.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
tcccCardReceived	HLAboolean	Mark "X" (true) if TCCC card was received. Default value false
patientChartReceived	HLAboolean	Mark "X" (true) if Patient Chart was received. Default value false
none	HLAboolean	Mark "X" (true) if no documents were received. Default value false
otherDocumentNameReceived	HLAASCIIstring	String describing other patient documents received

8.4.3.45. EnrouteCareProviderRecord

[DA4700]
Record up to two ERC providers including name, rank, level of training and signature

Encoding: HLAfixedRecord

Name	Datatype	Semantics
lastName	HLAASCIIstring	Last name of the ERC provider
firstName	HLAASCIIstring	First name of the ERC provider
rank	HLAASCIIstring	Rank of the ERC provider.
capability	EnrouteCareProviderCapabilityEnum	Select the provider’s capability from the dropdown list (EMT-B, EMT-I, EMT-P, EMT-FPC, RN, CRNA, PA, MD/DO).
signature	HLAASCIIstring	Digital Signature. <?? Determine the best way to represent a digital signature>

8.4.3.46. CasualtyProtectiveEquipmentRecord

[DA4700]
Check all protective equipment worn by the patient

Encoding: HLAfixedRecord

Name	Datatype	Semantics
helmetBallistic	HLAboolean	Type "X" if worn by the patient
tacticalVestImprovedOuterTacticalVest	HLAboolean	iType "X" if worn by the patient improved outer tactical vest (iotv)
eyeProtection	HLAboolean	Type "X" if worn by the patient
earProtection	HLAboolean	Type "X" if worn by the patient
plateFront	HLAboolean	Type "X" if worn by the patient
plateBack	HLAboolean	Type "X" if worn by the patient
plateRightSide	HLAboolean	Type "X" if worn by the patient
plateLeftSide	HLAboolean	Type "X" if worn by the patient
neckProtectorBack	HLAboolean	Type "X" if worn by the patient
throatProtectorFront	HLAboolean	Type "X" if worn by the patient
deltoidRight	HLAboolean	Type "X" if worn by the patient
deltoidLeft	HLAboolean	Type "X" if worn by the patient
groinShield	HLAboolean	Type "X" if worn by the patient
pelvicUndergarmetTier1	HLAboolean	Type "X" if worn by the patient
pelvicUndergarmetTier2	HLAboolean	Type "X" if worn by the patient
blastGauge	HLAboolean	Type "X" if worn by the patient
blastSensorHelmet	HLAboolean	Type "X" if worn by the patient
blastSensorOther	HLAboolean	Type "X" if worn by the patient

8.4.3.47. PatientIdentificationRecord

[DA4700]
Patient Identification section duplicated on all pages of the DA4700

Encoding: HLAfixedRecord

Name	Datatype	Semantics
lastName	HLAASCIIstring	Last name of patient
firstName	HLAASCIIstring	First name of patient.
middleInitial	HLAASCIIstring	Middle Initial of Patient.
battleRoster	HLAASCIIstring	Record first letter of patient’s first name, then first letter of patient’s last name, then record the last four numbers of patient’s Social Security number. For example, John Doe 123-12-1234 is Battle Roster # ‘JD1234’.
patientRank	HLAASCIIstring	Record Patient's rank.

patientUnit	HLAASCIIstring	Record patient's unit name. Leave blank if patient is not a member of a military unit (e.g. civilian, enemy)
category	PatientCategoryEnum	Select the patient's category from the dropdown list.
socialSecurityAccountNumber	HLAASCIIstring	Patient SSN or ID
dateOfBirth	HLAASCIIstring	Format MM/DD/YYYY if known.
gender	GenderEnum	Gender of patient.
allergyTypes	AllergyTypesEnum	Select patient's known drug allergies from dropdown list.
allergyOther	HLAASCIIstring	Specify allergy type if allergyOther is selected for Allergy.

8.4.3.48. EventRecord

[DA4700]
Event section

Encoding: HLAfixedRecord

Name	Datatype	Semantics
eventDate	HLAASCIIstring	Format MM/DD/YYYY
eventTime	HLAASCIIstring	Format HH:MM Time that the injury occurred.
timeZone	HLAASCIIchar	L - Relative to local time Z - Relative to Zulu time
medicalMissionNumber	HLAASCIIstring	Record the medical mission number, for example (S)01-16A. MMN auto populates on page 2.
patientNumber	Integer32BE	Record the patient's number (first blank) for this evacuation.
patientNumberOf	Integer32BE	Record the total number of patients (second blank) for this evacuation. This is used with the PatientNumber
tailToTail	HLAboolean	Mark an 'X' Y (yes) or N (no) for tail-to-tail evacuation.
legNumber	Integer32BE	First component of Leg#___ of ____
legNumberOf	Integer32BE	Second component of Leg#___ of ____

8.4.3.49. NineLineRecord

[DA4700]
9 line section

Encoding: HLAfixedRecord

Name	Datatype	Semantics

time	HLAASCIIstring	Format: hh:mm Record 24-hour time of 9-Line (hhmm) in the same time zone as marked in 'Time Zone' above.
timeZone	TimeZoneEnum	Local or Zulu
platform	HLAASCIIstring	On automated form, select the platform from the dropdown list. Option to fill in the blank with individual platform description. Not feasible to enumerate the platforms.
dispatchCategory	EvacuationCategoryEnum	On automated form, dropdown list Urgent, Priority or Routine
assessedCategory	EvacuationCategoryEnum	On automated form, select Urgent, Priority or Routine.

8.4.3.50. TraumaMechanismInjurySymtomsTreatmentDiagnosisRecord

[DA4700]
Trauma MIST Report section

Encoding: HLAfixedRecord

Name	Datatype	Semantics
diseaseDiagnosis	HLAASCIIstring	If the evacuation is due to disease, record the diagnosis of the disease. Record N/A if evacuation is not due to disease.
mechanism	MechanismOfInjuryEnum	Select the dominant/primary Mechanism of injury from the dropdown list. If more than one Mechanism, specify additional mechanisms in Comments.
injury	InjuryEnum	[DA4700] Trauma MIST section Select the type of Injury from the dropdown list.
symptoms	HLAASCIIstring	Record the patient's Signs and Symptoms.
treatment	HLAASCIIstring	Record the Treatment given to the patient.
comments	HLAASCIIstring	Record clarifying 9-Line comments.

8.4.3.51. PickupDropoffRecord

[DA4700]
Pickup Dropoff section.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
pickupTime	HLAASCIIstring	Time. Record 24-hour time of pickup. Time auto formats hh:mm.

pickupRole	PickupRoleEnum	Select the Role (level of care) from which the patient is picked up, from the dropdown list:1-POI (Point of Injury), 1-Aid Station, Role 2, Role 3, Role 4, Other. If 'Other', record the level of care/facility.
pickupRoleOther	HLAASCIIstring	If the role is not found in the dropdown list. Select the Role (level of care) from which the patient is picked up, from the dropdown list:1-POI (Point of Injury), 1-Aid Station, Role 2, Role 3, Role 4, Other. If 'Other', record the level of care/facility.
pickupRegion	HLAASCIIstring	Region. Select the region in which the pickup occurred. If 'Other', record the region name.
pickupRegionOther	HLAASCIIstring	Region. Select the region in which the pickup occurred. If 'Other', record the region name.
pickupLocation	HLAASCIIstring	Location. Record the specific geographic location of the pickup.
dropOffTime	HLAASCIIstring	Time. Record 24-hour time of dropoff. Time auto formats hh:mm.
dropOffRole	DropoffRoleEnum	Role. Select the Role (level of care) at which the patient is dropped off, from the dropdown list: 1-Aid Station, Role 2, Role 3, Role 4, Other.
dropOffRoleOther	HLAASCIIstring	If 'Other', record the level of care/facility.
dropOffRegion	HLAASCIIstring	Region. Select the region in which the dropoff occurred. If 'Other', record the region name.
dropOffRegionOther	HLAASCIIstring	If 'Other', record the region name.
dropOffLocation	HLAASCIIstring	Location. Record the specific geographic location of the dropoff.

8.4.3.52. AnnotateInjuriesRecord

[DA4700]
For the Annotate Injuries section of the DA4700, associate an injury with a location or locations on the body per the body image shown in the form.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
injury	InjuriesTypeEnum	Injury
injuryLocation	BodyAreaFineArray	Location or locations/area of injury. A single element array indicates an injury associated with a particular body location. Multiple array values indicate an injury associated with an area of the body.

8.4.3.53. MedicationsAndFluidsRecord

[DA4700]
Single entry in the Medications and Fluids section of the DA4700

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	24 hour time format local time
drugOrFluid	HLAASCIIstring	Record the drug or fluid administered
dose	HLAASCIIstring	Dosage and units (e.g. 10mL, 4 caps)
route	MedicineRouteEnum	Route that the medication was administered

8.4.3.54. TourniquetRecord

[DD1380]
In the TCCC Injury Section to document type and time of tourniquet application

Encoding: HLAfixedRecord

Name	Datatype	Semantics
type	HLAASCIIstring	In InjurySection, insert the type of tourniquet applied
time	HLAASCIIstring	Format HH:MM Z/L (zulu or local time)

8.4.3.55. InjuryAnnotationRecord

]DD1380]
Injury section of DD1380. Four extremity tourniquets and an array of injury/location annotations

Encoding: HLAfixedRecord

Name	Datatype	Semantics
rightArmTourniquet	TourniquetRecord	Annotate tourniquet on patient's right arm
leftArmTourniquet	TourniquetRecord	Annotate tourniquet on patient's left arm
rightLegTourniquet	TourniquetRecord	Annotate tourniquet on patient's right leg
leftLegTourniquet	TourniquetRecord	Annotate tourniquet on patient's left leg
annotationList	InjuryLocationArray	Annotate injuries and body locations of injuries

8.4.3.56. InjuryLocationRecord

[DD1380]
Associate an injury with a location on the body. Used in the Injury section of the DD1380.

Encoding: HLAfixedRecord

Name	Datatype	Semantics

injuryType	HLAASCIIstring	InjuryType string allows the trainee to record any injury type. Originally set as an enumerated type, but examination of several DD1380's show variability. The trainee also needs to be able to record "incorrect" injury types.
injuryLocation	BodyAreaCoarseArray	Coarse Body Location/locations for DD1380. Empty array indicates an injury not associated with a particular location on the body. A single element array indicates an injury associated with a particular body location. Multiple array values indicate an injury associated with an area of the body.

8.4.3.57. EyeAssessmentRecord

[DA4700]
PERRLA.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
rightEye	PupilsEqualRoundReactiveToLightAndAccomodationRecord	PERRLA assessment right eye
leftEye	PupilsEqualRoundReactiveToLightAndAccomodationRecord	PERRLA assessment left eye

8.4.3.58. IntravenousArterialLineRecord

[DA4700]
Location of the Arterial IV

Encoding: HLAfixedRecord

Name	Datatype	Semantics
wristRight	HLAboolean	Arterial IV in the right wrist
wristLeft	HLAboolean	Arterial IV in the left wrist
groinRight	HLAboolean	Arterial IV in the right groin
groinLeft	HLAboolean	Arterial IV in the left groin

8.4.3.59. PFC_HeaderRecord

Header section of PFC card

Encoding: HLAfixedRecord

Name	Datatype	Semantics
name	HLAASCIIstring	Patient name
date	HLAASCIIstring	Date the PFC treatment began

time	HLAASCIIstring	Time the PFC treatment began
timeZone	HLAASCIIstring	Timezone that PFC treatment began in
weightKg	Integer32BE	Patient weight (if in kilograms)
weightLb	Integer32BE	Patient weight (if in pounds)
idealBodyWeight	Integer32BE	Ideal body weight in the same units used to record the patient weight.
height	Integer32BE	Patient height in inches
bloodType	BloodTypeEnum	Blood type of the patient if known.
titer	HLAASCIIstring	
triageCategory	HLAASCIIstring	Immediate (Red triage tag), Delayed (Yellow triage tag), Minimal (Green triage tag), Expectant (Black triage tag)
evacCategory	EvacuationCategoryEnum	

8.4.3.60. PFC_SampleRecord

Document information about patient at the start of PFC.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
signsSymptoms	HLAASCIIstring	Document patient signs and symptoms
allergies	HLAASCIIstring	Document patient allergies
medications	HLAASCIIstring	Document any medications the patient is already taking, not what has been dosed by the medic.
pertinentMedicalHistory	HLAASCIIstring	Document pertinent patient medical history. Existing or prior conditions that are pertinent to the current injury. Does not include full patient history.
lastOralIntake	HLAASCIIstring	Relates more to last food/water intake, not medications.
eventsLeadingToInjury	HLAASCIIstring	Document what led up to the injury. Adds detail to the mechanism of injury.

8.4.3.61. PFC_TourniquetRecord

PFC record of tourniquet application and time converted.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
timeOn	HLAASCIIstring	Time tourniquet was applied. Format HH:MM Z/L (zulu or local time)

timeConverted	HLAASCIIstring	Time tourniquet was converted. Format HH:MM Z/L (zulu or local time)

8.4.3.62. PFC_TranexamicAcidRecord

TXA - Blood Clotting medication

Encoding: HLAfixedRecord

Name	Datatype	Semantics
timeDose1	HLAASCIIstring	Time of first dose of TXA
timeDose2	HLAASCIIstring	Time of second dose of TXA

8.4.3.63. PFC_FlowsheetRecord

Single column entry in a PFC flowsheet

Encoding: HLAfixedRecord

Name	Datatype	Semantics
hour	Integer32BE	Hour the reading was taken
minute	Integer32BE	minute the reading was taken.
otherValue	HLAASCIIstring	In the event one of the vital signs exceeds 200, it would be entered there along with the symbol.
systolicBloodPressure	Integer32BE	Systolic Blood Pressure represented as an integer
diastolicBloodPressure	Integer32BE	Diastolic Blood Pressure represented as an integer.
temperatureFahrenheit	FloatType32BE	Temperature in degrees Fahrenheit.
pulseOxO2Ssaturation	Integer32BE	SPO2 - pulseOxO2Ssaturation.
pulse	Integer32BE	Beats per minute
meanArterialPressure	Integer32BE	MAP - Mean Arterial Pressure, defined as the average pressure in a patient's arteries during one cardiac cycle.
respirationEndTidalCarbonDioxide	FloatType32BE	ETCO2
respiratoryRate	Integer32BE	Breaths per minute
noRead	HLAASCIIstring	"No Read" would be selected in the event that one or more of the monitoring devices failed during a vital signs check.
urineOutput	FloatType32BE	Units in MilliLiters (mL)
fluidInput	FloatType32BE	Units in MilliLiters (mL)
richmondAgitationSedationScale	Integer32BE	
neuroMACE	HLAASCIIstring	Military Acute Concussion Evaluation.
eyeResponse	Integer32BE	Eye response portion of the Glasgow Coma Scale (GCS) 1-4

oralResponse	Integer32BE	Verbal response portion of the Glasgow Coma Scale (GCS) 1-5
motorResponse	Integer32BE	Motor response portion of the Glasgow Coma Scale (GCS) 1-5
glasgowComaScaleTotal	Integer32BE	Total of the three previous entries (total 1-15)
drugIntervention1	HLAASCIIstring	Drug Intervention
drugIntervention2	HLAASCIIstring	Drug Intervention
drugIntervention3	HLAASCIIstring	Drug Intervention
drugIntervention4	HLAASCIIstring	Drug Intervention
drugIntervention5	HLAASCIIstring	Drug Intervention
drugIntervention6	HLAASCIIstring	Drug Intervention
tidalVolume	HLAASCIIstring	Record initial and subsequent vent setting values for TV (Tidal Volume).
ventRate	HLAASCIIstring	Record initial and subsequent vent setting values for Rate.
percentO2	HLAASCIIstring	Record initial and subsequent vent setting values for FiO2. inspired oxygen fraction (FIO2).
positiveEndExpiratoryPressure	HLAASCIIstring	Positive end-expiratory pressure (PEEP).
peakInspiratoryPressure	HLAASCIIstring	Record initial and subsequent vent setting values for PIP. PIP = peak inspiratory pressure.
plateauPressure	HLAASCIIstring	pPlat - Plateau pressures are measured at the end of the inspiratory phase of a ventilator-cycled tidal volume.
inToOutRatio	HLAASCIIstring	I:E ration - Inspiratory:Expiratory ratio refers to the ratio of inspiratory time:expiratory time.
flowRate	Integer32BE	Flow rate of oxygen measured in Liters Per Minute / LPM

8.4.3.64. PFC_BloodAnalysisRecord

One reading of a blood analysis. PFC supports 6 readings

Encoding: HLAfixedRecord

Name	Datatype	Semantics
pH	FloatType32BE	Acidity in blood
pCO2	FloatType32BE	Measured in mmHg. Partial pressure Carbon Dioxide
hCO3	FloatType32BE	Measured in mEq/L. Bicarbonate
sO2	FloatType32BE	Measured in %, .89 = 89%. Oxygen Saturation.
baseExcess	FloatType32BE	Measured in mEq/uL , Base excess/deficit of acid neutralizing buffer.
sodium	FloatType32BE	NA+, Measured in mEq/L
potassium	FloatType32BE	K+, Measured in mmol/L
calcium	FloatType32BE	Ca++, Measured in mg/dL
chloride	FloatType32BE	CL-, Measured in MEq/L

anionGap	FloatType32BE	Measured in mEq/L
internationalNormalizedRatio	FloatType32BE	Measured in seconds.
prothrombinTime	FloatType32BE	Measured in seconds.
whiteBloodCellCount	Integer32BE	Number per mcL
plateletCount	Integer32BE	Number per mL
hematocrit	FloatType32BE	Measured in %, .89 = 89%
cHemoglobin	FloatType32BE	Measured in grams per deciliter or g/dl
bloodUreaNitrogen	FloatType32BE	BUN, Measured in mg/dL
glucose	FloatType32BE	Measured in mg/dL
lactate	FloatType32BE	Measured in mmol/L
creatin	FloatType32BE	Measured in mg/dL

8.4.3.65. PFC_TreatmentChecklistRecord

Treatment Checklist PFC card

Encoding: HLAfixedRecord

Name	Datatype	Semantics
StopMassiveBleeding	HLAboolean	0=unchecked, 1=checked. Default 0
openAirway	HLAboolean	0=unchecked, 1=checked. Default 0
thoracostomyNeedleDecompression	HLAboolean	0=unchecked, 1=checked. Default 0
initiateBloodTransfusion	HLAboolean	0=unchecked, 1=checked. Default 0
firstTXADose	HLAboolean	0=unchecked, 1=checked. Default 0
calcium	HLAboolean	0=unchecked, 1=checked. Default 0
sendMISTreport	HLAboolean	0=unchecked, 1=checked. Default 0
reassessTx	HLAboolean	0=unchecked, 1=checked. Default 0
expose	HLAboolean	0=unchecked, 1=checked. Default 0
detailedExam	HLAboolean	0=unchecked, 1=checked. Default 0
pelvicBinder	HLAboolean	0=unchecked, 1=checked. Default 0
hypothermiaTx	HLAboolean	0=unchecked, 1=checked. Default 0
monitors	HLAboolean	0=unchecked, 1=checked. Default 0
secondIvIo	HLAboolean	0=unchecked, 1=checked. Default 0
GcsNeuroMace	HLAboolean	0=unchecked, 1=checked. Default 0
analgesia	HLAboolean	0=unchecked, 1=checked. Default 0
ngOgTube	HLAboolean	0=unchecked, 1=checked. Default 0
upgradeAirway	HLAboolean	0=unchecked, 1=checked. Default 0
postCricChecklist	HLAboolean	0=unchecked, 1=checked. Default 0

ventBvmWithPeep	HLAboolean	0=unchecked, 1=checked. Default 0
recalcTbsaAndFluids	HLAboolean	0=unchecked, 1=checked. Default 0
ultrasoundEfast	HLAboolean	0=unchecked, 1=checked. Default 0
teleconsult	HLAboolean	0=unchecked, 1=checked. Default 0
pressordForDistributiveShock	HLAboolean	0=unchecked, 1=checked. Default 0
convertTqLessThan4Hours	HLAboolean	0=unchecked, 1=checked. Default 0
foleyBladderTap	HLAboolean	0=unchecked, 1=checked. Default 0
adjustVentSettings	HLAboolean	0=unchecked, 1=checked. Default 0
UaDipstick	HLAboolean	0=unchecked, 1=checked. Default 0
clearCspine	HLAboolean	0=unchecked, 1=checked. Default 0
positionPadPatient	HLAboolean	0=unchecked, 1=checked. Default 0
peripheralPulses	HLAboolean	0=unchecked, 1=checked. Default 0
compartmentSyndrome	HLAboolean	0=unchecked, 1=checked. Default 0
escharotomy	HLAboolean	0=unchecked, 1=checked. Default 0
reduceSplintFx	HLAboolean	0=unchecked, 1=checked. Default 0
DvtProphylaxis	HLAboolean	0=unchecked, 1=checked. Default 0
antibioticWarWoundTx	HLAboolean	0=unchecked, 1=checked. Default 0
tetanus	HLAboolean	0=unchecked, 1=checked. Default 0
labs	HLAboolean	0=unchecked, 1=checked. Default 0
xRayImaging	HLAboolean	0=unchecked, 1=checked. Default 0
preOpEvaluation	HLAboolean	0=unchecked, 1=checked. Default 0
debridement	HLAboolean	0=unchecked, 1=checked. Default 0
amputation	HLAboolean	0=unchecked, 1=checked. Default 0
fasciotomy	HLAboolean	0=unchecked, 1=checked. Default 0
shunt	HLAboolean	0=unchecked, 1=checked. Default 0
preperitonealPelvicPacking	HLAboolean	0=unchecked, 1=checked. Default 0
vitals	HLAboolean	0=unchecked, 1=checked. Default 0
flushSalineLocks	HLAboolean	0=unchecked, 1=checked. Default 0
suctionEtTube	HLAboolean	0=unchecked, 1=checked. Default 0
reposition	HLAboolean	0=unchecked, 1=checked. Default 0
oralCareHygene	HLAboolean	0=unchecked, 1=checked. Default 0
foleyCare	HLAboolean	0=unchecked, 1=checked. Default 0
checkPeripheralPulses	HLAboolean	0=unchecked, 1=checked. Default 0

8.4.3.66. PFC_MistReportRecord

MIST report section of the PFC card

Encoding: HLAfixedRecord

Name	Datatype	Semantics
time	HLAASCIIstring	Time MIST report is/was sent
mechanismOfInjury	HLAASCIIstring	Document the mechanism of injury
stable	HLAboolean	Document stable or unstable by circling the correct term. False/0=unstable, True/1=stable

8.4.3.67. PFC_InjuryTreatmentAnnotationRecord

Visually annotate an injury on the figure using a circled integer (injuryNumber) and associated injury descriptions and treatments in the adjacent columns associating the using the injuryNumber.

Encoding: HLAfixedRecord

Name	Datatype	Semantics
injuryNumber	Integer32BE	Consecutive integers on the body outline to indicate where the injury occurred. For Area Injuries, the same integer would be placed on the different body areas.
injuryLocation	BodyAreaCoarseArray	Array of locations where the injury occurred. Empty array indicates an injury not associated with a particular location on the body. A single element array indicates an injury associated with a particular body location. Multiple array values indicate an injury associated with an area of the body.
injuryDescription	HLAASCIIstring	Begin the entry with the injuryNumber from the body outline that the injury pertains to. Multiple injuries may be associated with a single injury annotation in the figure. Each associated injury would have the same injuryNumber.
injuryTreatment	HLAASCIIstring	Begin the entry with the injuryNumber from the body outline across from the injuryDescription the treatment pertains to. Multiple treatments may be associated with a single injuryDescription. Each associated treatment would have the same injuryNumber.

8.5. Switches

Auto Provide	Enabled
Convey Region Designator Sets	Disabled
Convey Producing Federate	Disabled
Attribute Scope Advisory	Disabled
Attribute Relevance Advisory	Disabled
Object Class Relevance Advisory	Disabled

Interaction Relevance Advisory	Disabled
Service Reporting	Disabled
Exception Reporting	Disabled
Delay Subscription Evaluation	Disabled
Automatic Resign Action	CancelThenDeleteThenDivest

9. SimControl

9.1. Identification

Name	SimulationControl
Type	FOM
Version	3a
Modification Date	2020-03-13
Security Classification	unclassified
Purpose	All monitoring and exercise control
Application Domain	Training
Description	The SimControl module will include data and commands monitoring the realtime status of a simulation (training exercise) and controlling that simulation. These functions are often referred to as the "white cell" component of a simulation system.
Use Limitation	
Other	

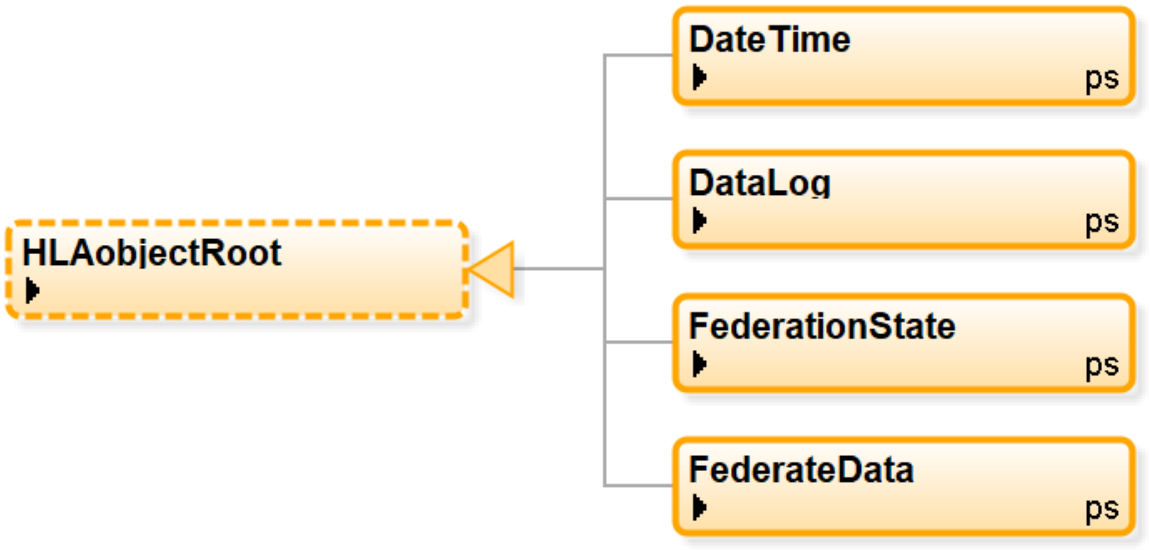
9.1.1. Technical POC Point of Contact

Name	
Organization	Information Visualization and Innovative Research Inc.
Telephone	
Email	jets@ivirinc.com

9.1.2. Dependencies

- Base

9.2. Object Classes



9.2.1. DateTime

HLAobjectRoot.DateTime

The controller federate is responsible for maintaining/updating three perspectives on time: the simulationElapsedTime, the simulatedDateTime (when the federation is simulating), and currentDateTime (the current time from the system clock). The simulatedDateTime may not matter for some training events and is optional.

The controller federate is responsible for SimulationControl interactions to start/stop, save/restore and pause/resume.

Saves will be preceded with a pause so that simulations can save their state without executing.

Attribute	Datatype	Semantics
simulationElapsedTime	HLAinteger64Time	simulationElapsedTime - represents the seconds/milliseconds since the start of the execution. The Start Execution interaction sets the counter to zero and begins the timer while Stop Execution stops the timer from advancing. The timer cannot be advanced from a Stop Execution. Pause stops advancing the time while resume starts advancing the timer from its last value.
simulatedDateTime	HLAinteger64Time	Date and time the federation is simulating… e.g. 11 February, 1979 at 13:42 Zulu.
currentDateTime	HLAinteger64Time	Current "Real" date and time as might be obtained from a system call.
timeScale	Integer32BE	If null, default scale of 1:1. Only positive integers. X represents an X:1 scaled time advancement.

9.2.2. DataLog

HLAobjectRoot.DataLog

Logged data

Attribute	Datatype	Semantics
time	HLAinteger64Time	Time the data was logged in system time
source	HLAASCIIstring	Name of the federate doing the logging
data	HLAASCIIstring	A string representing the logged data. Sender and receiver will be responsible for parsing the string to produce data.

9.2.3. FederationState

HLAobjectRoot.FederationState

Federates will subscribe to this class to determine the current state of the federation. Allows late joiners to discover the current state:

0 - pendingStart; federation is initializing
1 - running; federation is executing
2 - stopped; federation is stopped. Execution has ended and will not resume
3 - paused; federation is paused. Wait for running state to begin execution
4 - saving; federation is in a saving state. Wait for running state to begin execution.
5 - resuming; federation is in a resuming state. Wait for running state to begin execution.

Attribute	Datatype	Semantics
state	FederationStateEnum	Indicator of the current state of the federation.

9.2.4. FederateData

HLAobjectRoot.FederateData

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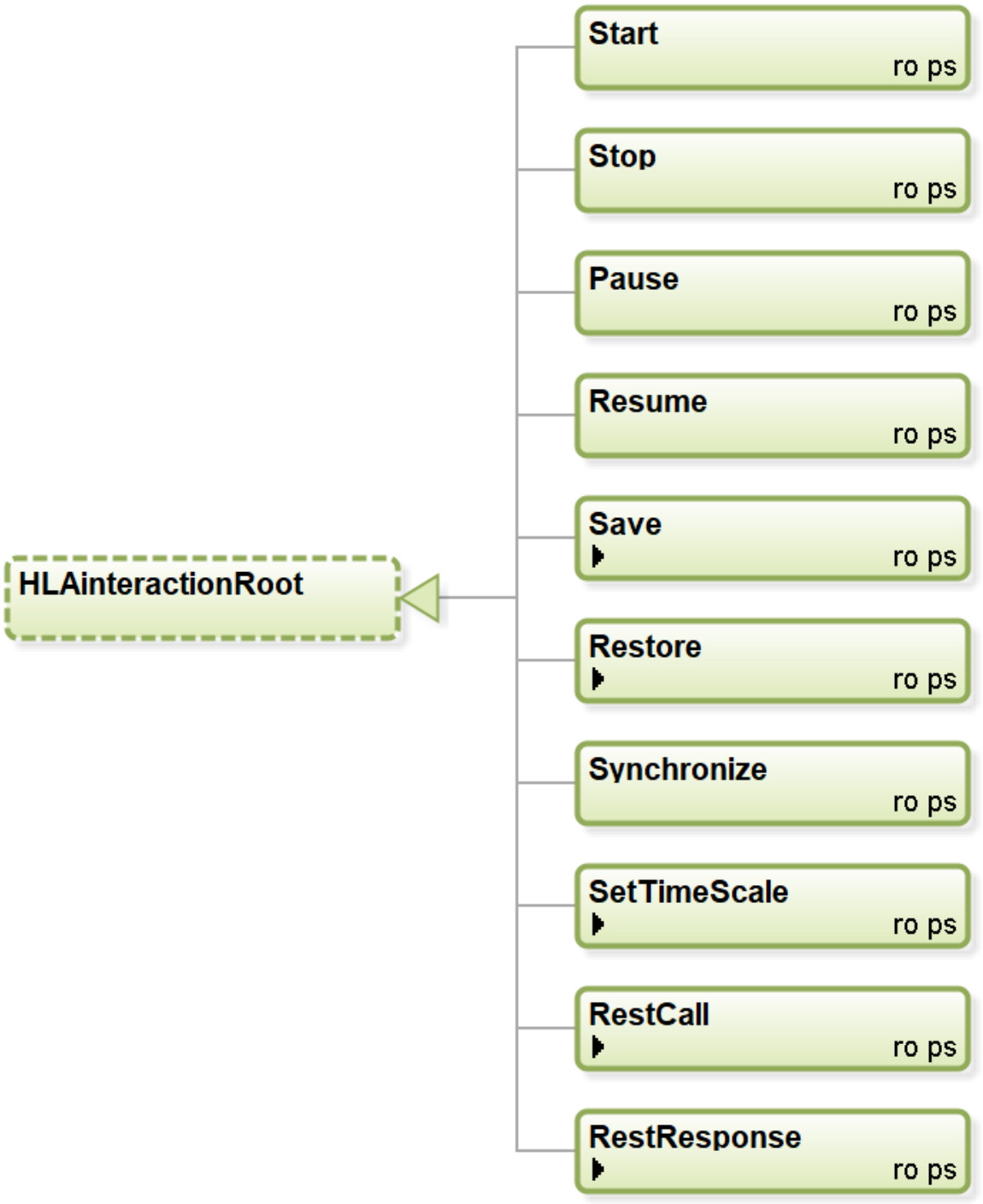
Attribute	Datatype	Semantics
id	HLAASCIIstring	
type	HLAASCIIstring	
payload	HLAASCIIstring	

9.3. Interaction Classes



9.3.1. Start

HLAinteractionRoot.Start
Interaction to request simulations begin execution.

9.3.2. Stop

HLAinteractionRoot.Stop
Interaction to request simulations stop execution. This is different from a pause.

9.3.3. Pause

HLAinteractionRoot.Pause
Sent to simulations to request a pause.

9.3.4. Resume

HLAinteractionRoot.Resume
Resume immediately when interaction is sent.

9.3.5. Save

HLAinteractionRoot.Save
Request to initiate a save.

Parameter	Datatype	Semantics
label	HLAASCIIstring	The label is a string supplied by the controller federate to allow Saves to be labeled for post execution analysis or restores.

9.3.6. Restore

HLAinteractionRoot.Restore
Saved state to restore from.

Parameter	Datatype	Semantics
label	HLAASCIIstring	The label is a string supplied by the controller federate to identify which saved state a federate would restore from.

9.3.7. Synchronize

HLAinteractionRoot.Synchronize
Placeholder.

9.3.8. SetTimeScale

HLAinteractionRoot.SetTimeScale
Used to set the timeScale attribute of the DateTime instance.

Parameter	Datatype	Semantics
scale	Integer32BE	Must be a positive integer representing the scaled time advancement for the federation.

9.3.9. RestCall

HLAinteractionRoot.RestCall
Experimental class.

Parameter	Datatype	Semantics
messageId	HLAASCIIstring	
toId	HLAASCIIstring	
fromId	HLAASCIIstring	
callMethod	HLAASCIIstring	
path	HLAASCIIstring	
payload	HLAASCIIstring	

9.3.10. RestResponse

HLAinteractionRoot.RestResponse
Experimental class.

Parameter	Datatype	Semantics
messageId	HLAASCIIstring	
toId	HLAASCIIstring	
fromId	HLAASCIIstring	
responseCode	Integer32BE	
payload	HLAASCIIstring	

9.4. Datatypes

9.4.1. Enumerated Datatypes

9.4.1.1. FederationStateEnum

Indicates current state of the federation. Late joiners will be able to determine the current state of the federation upon joining.

Representation: HLAinteger32BE

Enumerator	Value
pendingStart	0
running	1
stopped	2
paused	3

saving	4
resuming	5

9.5. Switches

Auto Provide	Enabled
Convey Region Designator Sets	Disabled
Convey Producing Federate	Disabled
Attribute Scope Advisory	Disabled
Attribute Relevance Advisory	Disabled
Object Class Relevance Advisory	Disabled
Interaction Relevance Advisory	Disabled
Service Reporting	Disabled
Exception Reporting	Disabled
Delay Subscription Evaluation	Disabled
Automatic Resign Action	CancelThenDeleteThenDivest