

type parameterized action =
 (name: STRING;
 participants: agent-and-objects;
 applicability conditions: BOOLEAN-expression;
 preparatory specification: *sequence* conditions-and-actions;
 termination conditions: BOOLEAN-expression;
 post assertion: STATEMENT;
 during conditions: STATEMENT;
 purpose: purpose-specification;
 subactions: par-constraint-graph;
 parent action: parameterized action;
 previous action: parameterized action;
 concurrent action: parameterized action;
 next action: parameterized action;
 start: time-specification;
 duration: time-specification;
 priority: INTEGER;
 data: ANY-TYPE;
 kinematics: kinematics-specification;
 dynamics: dynamics-specification;
 manner: manner-specification;
 adverbs: *sequence* adverb-specification).

type agent-and-objects =
 (agent: agent representation;
 objects: *sequence* object representation).

type conditions-and-actions =
 (condition: BOOLEAN-expression;
 actions: parameterized action).

type purpose-specification =
 (achieve: BOOLEAN-expression;
 generate: *sequence* parameterized action;
 enable: *sequence* parameterized action).

type par-constraint-graph =
 (SEQUENTIAL,
 PARALLEL,
 PARALLEL-JOIN,
 PARALLEL-INDEPENDENT,
 WHILE).

type time-specification =
 (type: (ABSOLUTE,
 PAR-RELATIVE),
 units: (FRAMES, SECONDS);
 value: REAL).

type kinematics-specification =
 (time: time-specification;
 velocity: vector;

acceleration:	vector;
position:	site;
path:	path-specification).
<i>type</i> dynamics-specification =	
(force:	vector;
torque;	vector).
<i>type</i> vector =	
(x:	REAL;
y:	REAL;
z:	REAL).
<i>type</i> site =	
(position:	vector;
orientation:	vector).
<i>type</i> path-specification =	
(direction:	<i>sequence</i> direction-specification;
start:	location-specification;
end:	location-specification;
distance:	REAL;
modifiers:	(single-path-modifiers, aggregate-path-modifiers)).
<i>type</i> direction-specification =	
(direction:	(ACROSS,
	CLOCKWISE,
	TO,
	AROUND,
	DOWN,
	...),
object:	object representation).
<i>type</i> location-specification =	(site, <i>sequence</i> position-specification).
<i>type</i> position-specification =	
(position:	(ON,
	AT,
	IN,
	...),
object:	object representation).
<i>type</i> single-path-modifiers =	(FOLLOWING,
	GUIDING,
	SHADOWING,
	...).
<i>type</i> aggregate-path-modifiers =	(SWARMING,
	CONGREGATING,
	DISPERSING,
	...).
<i>type</i> manner-specification =	
(effort:	effort-specification;
shape:	shape-specification).

<i>type</i> effort-specification =	
(space:	REAL;
weight:	REAL;
time:	REAL;
flow:	REAL).
<i>type</i> shape-specification =	
(vertical:	REAL;
lateral:	REAL;
sagittal:	REAL;
shapeflow:	REAL).
<i>type</i> adverb-specification =	
(name:	(SLOWLY,
	HAPPILY,
	EXCITEDLY,
	DIRECTLY,
	STRONGLY,
	HAPHAZARDLY,
	...),
modifiers:	(EVEN,
	MORE,
	...)).

type object representation =
 (name: STRING;
 is agent: BOOLEAN;
 properties: sequence property-specification;
 status: status-specification;
 posture: posture-specification;
 location: object representation;
 contents: *sequence* object representation;
 capabilities: *sequence* parameterized action;
 relative directions: *sequence* relative-direction-specification;
 special directions: *sequence* special-direction-specification;
 sites: *sequence* site-type-specification;
 bounding volume: bounding-volume-specification;
 coordinate system: site;
 position: vector;
 velocity: vector;
 acceleration: vector;
 orientation: vector;
 data: ANY-TYPE).

type property-specification =

(name: STRING;
 value: ANY-TYPE).

type status-specification =

(NONE/DEAD,
 IDLE/OPERATIVE,
 ACTIVE{parameterized action}).

type posture-specification =

(NONE,
 NEUTRAL,
 SIT,
 STAND,
 CROUCH,
 PRONE,
 SUPINE,
 KNEEL,
 OPEN,
 CLOSE,
 AJAR,
 ...).

type relative-direction-specification =

(name: relative-orientation;
 value: site).

type relative-orientation =

(FRONT,
 BACK,
 LEFT,
 RIGHT,

<p><i>type</i> special-direction-specification = (name: value: <i>type</i> site-type-specification = (name: sites: <i>type</i> bounding-volume-specification = (type: value:</p>	<p>TOP, BOTTOM). STRING; site). (GRASP, APPROACH, BASE, ...); <i>sequence</i> site). (SPHERE, BOX, CONVEXHULL); <i>sequence</i> site).</p>
<p><i>type</i> agent representation = (emotion: personality: goals: appearance: physiology: culture: gender: age: social parameters: values and standards: knowledge base: affiliations: ...).</p>	<p>e.g. OCC; e.g. OCEAN; <i>sequence</i> STATEMENT; e.g. sloppy, neat, ...; e.g. tired, hungry, ...; e.g. Iraqi (NA, MALE, FEMALE); REAL; e.g. roles, status, ...; <i>sequence</i> STATEMENT; e.g. beliefs; e.g. organizations, entities, loyalties;</p>