Zooid API Documentation - Processing

Requires the UDP library by Stephane Cousot (Sketch->Import library…->Add Library…)

ZooidManager()

Description	Create a new ZooidManager object
Arguments	None
Returns	A new ZooidManager instance

void initialize(float screenWidth, float screenHeight)

Description	Initialize all the elements of the ZooidManager such as the local network communication, the data management or the dimension of the window.
Arguments	screenWidth, screenHeight: dimension of the window in pixels
Returns	None

boolean sendUpdates()

Description	Sends the updated instructions to command the Zooids over the network.
Arguments	None
Returns	True if successful False if not

bool updateZooid(int id, …) – Multiple definitions

Description	Updates the selected Zooid with the values in parameter
Arguments	id: id of the selected Zooid destination: destination coordinates in window or real world dimensions color: RGB color to be displayed orientation: the desired orientation of the Zooid in degrees (0-360º) speed: current speed of the Zooid in percent (0-100%) reassignable: zooid reassignable to any goal
Returns	True if the update was successful False if not

void moveZooid(int id, float x, float y)

Description	Moves the selected Zooid to the given coordinates
Arguments	id: id of the selected Zooid x, y: coordinates in window or real dimensions
Returns	None

void moveZooid(int id, PVector pos)

Description	Moves the selected Zooid to the given position
Arguments	index: id of the selected Zooid Pos: vector containing the coordinates in window or real dimensions
Returns	None

int getZooidSpeed(int id)

Description	Indicates the current speed of the selected Zooid
Arguments	id: id of the selected Zooid
Returns	The current speed of the Zooid in percent (0-100%)

void setZooidSpeed(int id, int speed)

Description	Sets the speed of the selected Zooid
Arguments	id: id of the selected Zooid speed: the speed of the Zooid in percent (0-100%)
Returns	None

void setZooidColor(int id, color c)

Description	Sets the color of the LED on the Zooid
Arguments	id: id of the selected Zooid c: color to be displayed
Returns	none

color getZooidColor(int id)

Description	Sends the updated instructions to command the Zooids.
Arguments	id: id of the selected Zooid
Returns	The current color of the selected Zooid

PVector getZooidPosition(int id)

Description	Indicates the current position of the selected Zooid
Arguments	id: id of the selected Zooid
Returns	vector containing the current coordinates in window or real dimensions

PVector getZooidDestination(int id)

Description	Indicates the destination of the selected Zooid
Arguments	id: id of the selected Zooid
Returns	destination coordinates in window or real world dimensions

float getZooidOrientation(int id)

Description	Indicates the current orientation of the selected Zooid
Arguments	id: id of the selected Zooid
Returns	The current orientation of the Zooid in degrees (0-360º)

void setZooidOrientation(int id, float _orientation)

Description	Sets the final orientation of the selected Zooid
Arguments	id: id of the selected Zooid _orientation: The desired orientation of the Zooid in degrees (0-360º)
Returns	None

int getNbZooids()

Description	Sends the updated instructions to command the Zooids.
Arguments	None
Returns	True if successful False if not

boolean isZooidTouched(int id)

Description	Indicates if the selected Zooid is touched
Arguments	id: id of the selected Zooid
Returns	True if touched False if not

boolean isZooidBlinded(int id)

Description	Indicates if the selected Zooid is blinded
Arguments	id: id of the selected Zooid
Returns	True if blinded False if not

boolean isZooidTapped(int id) – *NOT YET AVAILABLE*

Description	Indicates if the selected Zooid has been tapped.
Arguments	id: id of the selected Zooid
Returns	True if tapped False if not

boolean isZooidShaken(int id) – *NOT YET AVAILABLE*

Description	Indicates if the selected Zooid has been shaken.
Arguments	index: id of the selected Zooid
Returns	True if shaken False if not

boolean isInitialized()

Description	Indicates whether the ZooidManager is correctly initialized or not.
Arguments	None
Returns	True if initialized False if not

int getAssignmentMode()

Description	Indicates the current Zooid assignment strategy. Two strategies are possible: - Naive Assignment (Zooid #1 -> Goal#1) - Optimal assignment (closest Zooid assigned to a given goal)
Arguments	None
Returns	0 for Naive Assignment 1 for Optimal Assignment

void setAssignementMode(int mode)

Description	Sets the general goal assignment strategy, for now either naive or optimal
Arguments	Mode: selects the goal assignation mode (0 for Naive Assignment, 1 for Optimal Assignment)
Returns	None

float getZooidSize()

Description	Indicates the size of Zooids
Arguments	None
Returns	The diameter of Zooids converted in the units

void setZooidReassignable(int id, boolean _reassignable)

Description	Controls the reassignability of the selected Zooid (in Optimal assignment mode only)
Arguments	id: id of the selected Zooid _reassignable: - true (default) to allow the selected Zooid to be reassigned to any goal - false to have the selected Zooid always on same goal
Returns	None

void activateZooid(int id)

Description	Activates the selected Zooid
Arguments	id: id of the selected Zooid
Returns	None

void deactivateZooid(int id)

Description	Deactivates the selected Zooid to make it still
Arguments	id: id of the selected Zooid
Returns	None

void useRealWorldCoordinates()

Description	Allow to set Zooid positions with the real dimension (i.e. in meters)
Arguments	None
Returns	None

void useWindowCoordinates()

Description	Allow to set Zooid positions with the window dimension (i.e. in pixels)
Arguments	None
Returns	None

void setWindowSize(float w, float h)

Description	Sets the size of the window to be able to map the window coordinates into the real Zooids coordinates
Arguments	w, h: size of the window in pixels
Returns	None

float getRealWorldWidth()

Description	Provides the real dimension of the Zooids space
Arguments	None
Returns	The width of the Zooid space in meter

float getRealWorldHeight()

Description	Provides the real dimension of the Zooids space
Arguments	None
Returns	The height of the Zooid space in meter