**AA AirLock Software Specs**

**AirLock**

void openOuterDoor() throws AirLockException;

**(Note: pseudocode indentation indicates nesting)**

if outer door is already open then

throw an AirLockException reporting door is open

otherwise

try

if operation mode is AUTO then

if inner Door is open then

close inner door

equalise lock pressure with external environment pressure

open outer door

set airlock state to UNSEALED

catch any DoorException or PressureException

throw an AirLockException chaining any previous exception

void openInnerDoor() throws AirLockException, DoorException;

**(Note: pseudocode indentation indicates nesting)**

if inner door is already open then

throw AirLockException reporting door is open

otherwise

try

if operation mode is AUTO then

if outer Door is open then

close outer door

equalise lock pressure with internal cabin pressure

open inner door

set airlock state to UNSEALED

catch any DoorException or PressureException

throw an AirLockException chaining any previous exception

void closeOuterDoor() throws AirLockException;

**(Note: pseudocode indentation indicates nesting)**

try

close external door

if internal door is also closed then

set airlock state to SEALED

catch DoorException

throw an AirLockException chaining the DoorException

void closeInnerDoor() throws AirLockException;

**(Note: pseudocode indentation indicates nesting)**

try

close internal door

if external door is also closed then

set airlock state to SEALED

catch DoorException

throw an AirLockException chaining the DoorException

void equaliseWithCabinPressure() throws AirLockException;

if airlock state is not SEALED then

throws AirLockException

otherwise equalises lock pressure with spacecraft cabin pressure

void equaliseWithEnvironmentPressure() throws AirLockException;

if airlock state is not SEALED then

throws AirLockException

otherwise equalises lock pressure with spacecraft exterior environment pressure

void toggleOperationMode() throws AirLockException;

if airlock state is not SEALED then

throws AirLockException

otherwise toggles operationState between MANUAL and AUTO

boolean isInManualMode();

returns true if operationState is MANUAL otherwise false

boolean isInAutoMode();

returns true if operationState is AUTO otherwise false

boolean isInManualMode();

returns true if operationState is AUTO otherwise false

boolean isOuterDoorClosed();

returns true if outer door is CLOSED otherwise false

boolean isOuterDoorOpen();

returns true if outer door is OPEN otherwise false

boolean isInnerDoorClosed();

returns true if inner door is CLOSED otherwise false

boolean isInnerDoorOpen();

returns true if inner door is OPEN otherwise false

boolean isSealed();

returns true if airlock is SEALED

boolean isUnsealed();

returns true if airlock is UNSEALED