Iteration

We introduced the possibility to iterate the process of evaluation/execution of *Action Atoms*.

An **Iteration** is the evaluation of a given hex program with *Action Atoms* and the execution of the entailed *Action Atoms*.

This feature is very useful and becomes necessary when we want to use *Environment* in a proper way.

The behavior of the iteration process is controlled by means of a **Iteration** variable.

The default value of **Iteration** is "NO ITERATION" meaning that we won't do any iteration namely the evaluation/execution of *Action Atoms* will be performed only 1 time.

The user can modify this default behavior in 3 different ways:

- from a command line option
- by changing some built-in constant values (that override the behavior specified from command line)
- by entailing the truth of some built-in action predicates.

The "value" of **Iteration** can be specified in 2 ways:

- with `--acthexNumberIterations=NUMBER` (command line option) or `#acthexNumberIterations=NUMBER.` (built-in constant)

  `NUMBER` must be an integer number that expresses the number of iterations that the program will have to do (0 expresses that the iterations must continue indefinitely);

- with `--acthexDurationIterations=DURATION` (command line option) or `#acthexDurationIterations=DURATION.` (built-in constant)

  `DURATION` must be a time duration (expressed in seconds) after which the iterations must end (0 expresses that the iterations must continue indefinitely); obviously at the end of the current iteration (we verify at the end of each iteration if the time is over).

If `acthexNumberIterations` and `acthexDurationIterations` are specified both from command line options or both with built-in constant, they must be considered in OR (the program will end when it made the specified number of iterations or when the specified time has passed).

If `acthexNumberIterations` and `acthexDurationIterations` are specified more than once from command line options or more than once with built-in

constant, the program will throw an error if the values that are specified are different.

There are 2 “Special Atoms” that can modify the behavior of **Iteration**:

- `#acthexContinue{b|c|c_p}`

  If this ”Special Atom” is scheduled when the value of **Iteration** is the default value the program executes another iteration;

- `#acthexStop{b|c|c_p}`

  If this ”Special Atoms” is scheduled when the value of **Iteration** is set to a value other than the default one the iteration process will end at the end of the current iteration.