

Bug ID S-36: Exchanger Path Bug

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1. Problem

When a simBio protocol file contains multiple file name exchangers, the paths of the files generated by one exchanger mistakenly include the file paths of other exchangers.

2. Solution

The paths of the generated files should not be mixed together.

3. Modified file list

- org.simBio.sim.dm.exchange.FileNameExchanger

4. Code explanation

The code was tested using `matsuoka_et_al_2003/Fig1A.protocol.xml`. The Node `targetAttribute_` variable in `Exchanger.java` is used to hold two different kinds of values:

1. the membrane potential (mV), which is part of the file path
2. a complete file path made up of prefix + current time + mV + suffix

1. is returned by `UniformValueExchanger.getAllStateString()` and 2. is returned by `FileNameExchanger.getAllStateString()`. In the original code, when `Exchanger.getAllStateString()` was called, both of the above values would be mixed together, creating incorrect file paths, because the file path for one Exchanger was included in that of another. For example:

```
/target/matsuoka_et_al_2003/Fig1A/xml/1174869289170_-100.0target/
  matsuoka_et_al_2003/Fig1A/1174869289170_-100.0.csv.xml
```

The expected file path was

```
/target/matsuoka_et_al_2003/Fig1A/xml/1174869289170_-100.0.xml
```

but this file path had become combined with the file path of the other Exchanger

```
target/matsuoka_et_al_2003/Fig1A/1174869289170_-100.0.csv
```

After a `getAllStateString()` method was added to `FileNameExchanger`

```
public String getAllStateString() {
    return childExchanger_.getAllStateString();
}
```

the generated files had the expected file path:

```
/target/matsuoka_et_al_2003/Fig1A/xml/1175069427493_-100.0.xml
```