

# 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
```