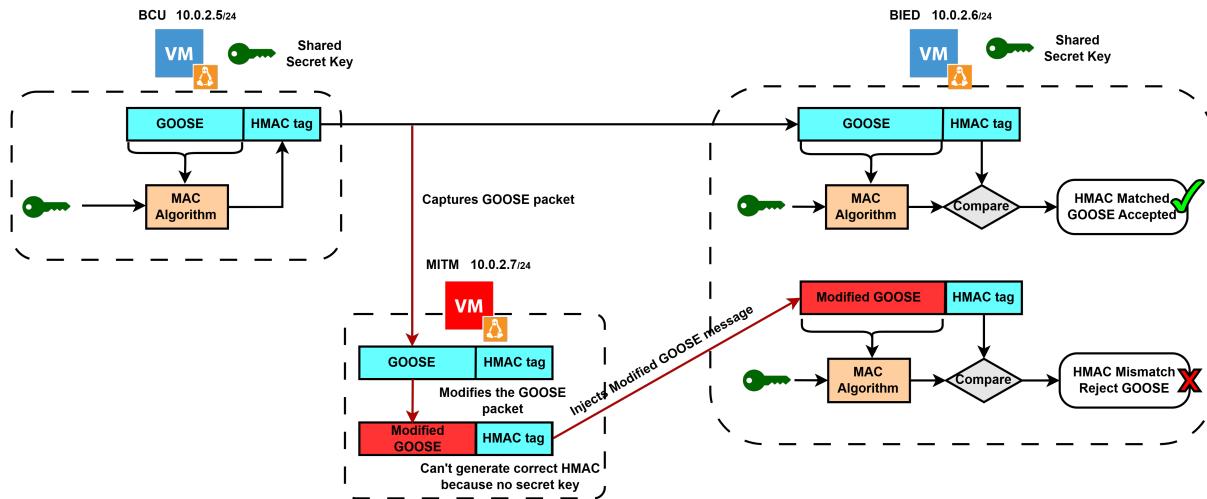


Lab 03: Securing GOOSE Communication Using HMAC

Objective



Step 1: Directory Structure Preparation

Create the required directory in cspg directory.

```
mkdir lab03
cd lab03
```

Step 2: CSPG-Level CMake Configuration

Navigate to the cspg directory and update the `CMakeLists.txt` file as per the repository instructions.

```
cd cspg
sudo nano CMakeLists.txt
```

Ensure the following line is present:

```
add_subdirectory(lab03)
```

Step 3: Lab03 File Integration

Inside the `lab03` directory, add the required publisher and receiver source files obtained from the GitHub repository.

Publisher (lab03):

- `CMakeLists.txt`
- `Makefile`
- `lab03_hmac_publisher.c`

Receiver (lab03):

- `CMakeLists.txt`
- `Makefile`
- `lab03_hmac.c`
- `lab03_hmac_base.c`

Step 4: GOOSE Source Code Updates

Update the following files in the `libiec61850/src/goose` directory using the modified versions from the repository:

- `goose_receiver.c`
- `goose_receiver.h`
- `goose_publisher.c`
- `goose_publisher.h`

Step 5: Rebuilding the libiec61850 Library

After all file updates, rebuild the library on both virtual machines.

```
cd libiec61850/build  
cmake ..  
make
```

Step 6: Receiver Execution (MU Side)

Navigate to the receiver build directory and execute the receiver application:

```
cd cspg/lab03  
sudo ./lab03_hmac eth0 "mysecret"
```

The GOOSE subscriber will start listening on the specified interface.

Step 7: Publisher Execution (IED Side)

Similarly, on the publisher virtual machine, execute the publisher application:

```
cd cspg/lab03  
sudo ./lab03_hmac_publisher eth0 "mysecret"
```