

# ComSubsystem

Short introduction

# Rescue Comms

- Each agent can send/hear 4 msg/cycle
- Each center can send/hear 2 x #agents
- One msg is 256 bytes
- hear(...) decodes byte[]
- tell(...) sends byte []
  
- channel selects channels to listen to
  - 0 – „say“/speaking, don't use

# CommObject (Token base class)

```
public abstract class CommObject {
    protected byte type;
    protected byte channel;

    public CommObject(byte type) {
        this.type = type;
        this.channel = 1;
    }
    public abstract int encode(byte [] msg, int start);
    public abstract int decode(byte [] msg, int start);
}
```

# CommInterface

```
public class CommInterface {
    public final static byte NO_TOKEN = 0x00;
    public final static byte EXPLORED_ID = 0x01;
    public final static byte EXPLORED_ID_LIST = 0x20;

    protected Agent myAgent;
    protected List<CommObject> sendQueue;

    public CommInterface(Agent myAgent);

    public void add(CommObject obj);
    public void tellAll() ;

    public boolean willListenHear(int from);
    public Collection<CommObject> hear(int from, byte[] msg);

    protected final void tell(int channel, byte[] message) {
        // NOTE: need to make Agent.tell() public
        myAgent.tell(channel, message);
    }
}
```

# Example

```
hear(int from, byte[] msg) {  
    Collection<CommObject> newInfo = com.hear(from,msg);  
    // handle newInfo  
}
```

```
sense() {  
    // reasoning code  
    IdToken idt ...  
    idt.setChannel(1);  
    com.add(idt);  
    // choose actions, etc.  
    com.tellAll();  
}
```

# The Jade Exercise

Steal the highest price

Task: use the weakness of the protocol.

Dishonesty would be punished in real world but not in the book trading example.

BookTrading further reading

<http://jade.tilab.com/doc/tutorials/JADEProgramming-Tutorial-for-beginners.pdf>

# Jade Tutorial

## Get the package

```
grp[X]@augusta:/home/dapeng/public/jade_pkg.tgz
```

“cp” to your group directory and “tar zxvf ...”

## Compile

```
“cd ~/jade” → “ant” → “ant examples”
```

You need install ant if you want to use your own computer.

## Run ssh -X grp#@augusta

```
“cd ~/jade/classes” → “java jade.Boot  
seller:examples.bookTrading.BookSellerAgent  
buyer:examples.bookTrading.BookBuyerAgent'(book_title)’”
```