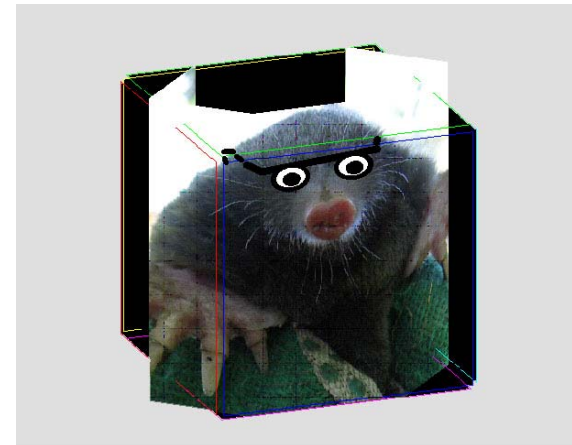
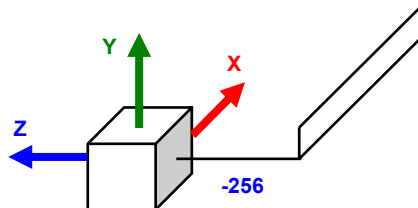


# Vorläufige Kurzfassung

## ■ HEAD Robot Head



# Definition

## ■ Purpose

- Modelling simple robot heads (no mimics, etc)

## ■ Two Robot Heads

- Mouth
- Eye(s)
- Ears

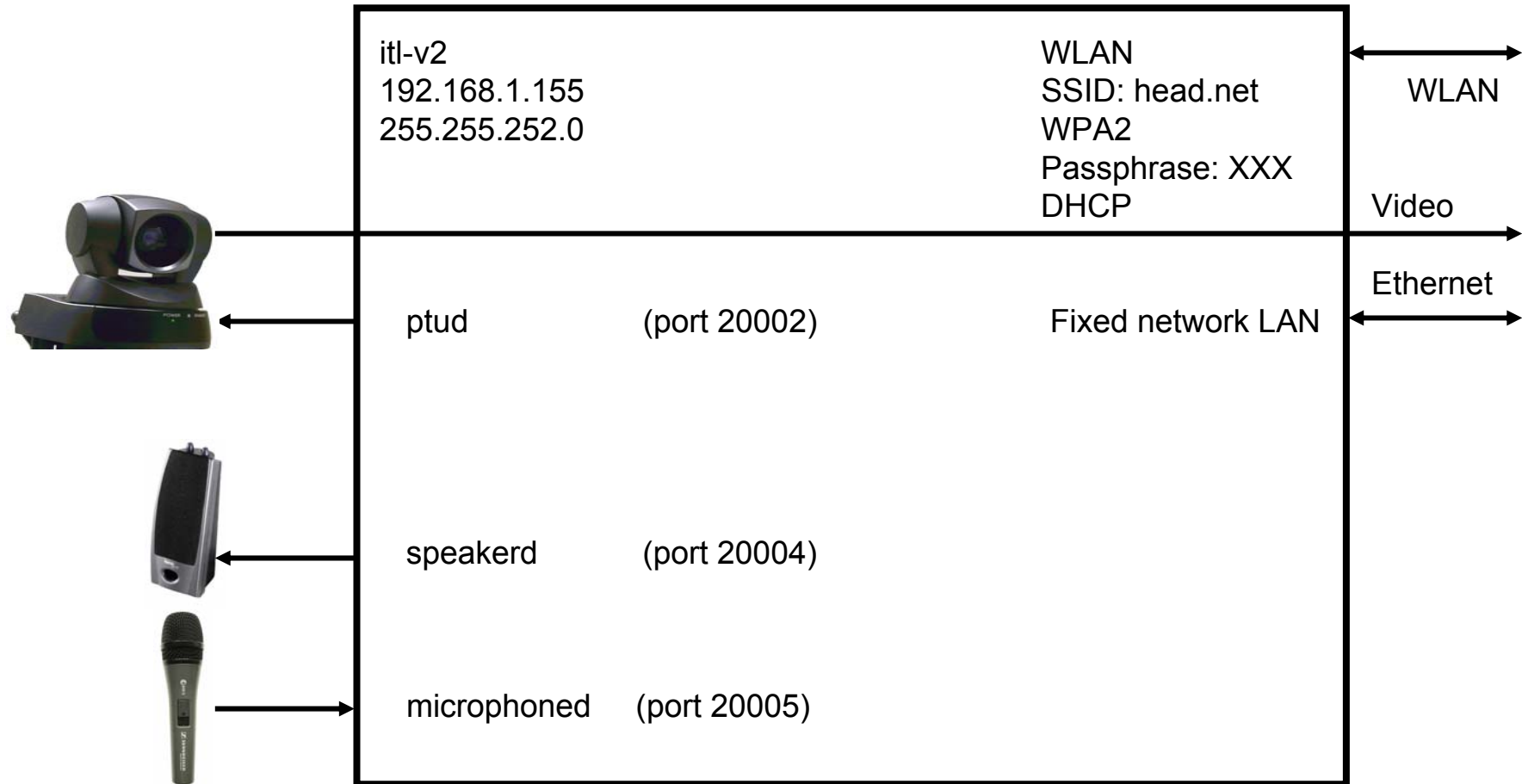
## ■ Hardware and Control

- Simple technical devices
- Unified message interfaces for distributed processes over network



# HEAD Robot Head (Frontend #2: Cyclops)

## ■ System Architecture of Distributed Processes and Devices



# HEAD Message Format Structure I

Field Name	Data Type	Total Range	Encoding	Max. Length (Bytes)
version	int32	-1..4	ASCII text	2
priority	int32	-1..	ASCII text	10
hop_limit	int32	0..	ASCII text	10
src_addr	int32	-1..	ASCII text	10
dst_addr	int32	-1..	ASCII text	10
seq_no	int32	-1..	ASCII text	10
timestamp	int32	-1..	ASCII text	10
sys_state	int32	-1..	ASCII text	10
info_text	char*	printable ASCII characters	ASCII text	MAX_MSG_LEN
coord_sys	int32	-1..	ASCII text	10
width	int32	0..	ASCII text	10
height	int32	0..	ASCII text	10
matrix	void*	+9999999 / 0...255 / ...	ASCII text / binary	width*height*elem_width+2

## ■ Example Message for Speaker Audio Out (DOS, Windows)

1\n20\n5\n13\n81\n4\n1234\n21\nTest\n81\n5\n1\nHallo\n\n

# HEAD Message Format Structure II

## ■ Example Message for PTU Position In

```
□ 1\n20\n5\n13\n21\n0\n1234\n21\nTest\n21\n1\n1\n20000 10000 0
```

## ■ Example Message for RGB Image Out

```
□ 1\n20\n5\n13\n21\n0\n1234\n21\nTest\n21\n3\n3\nABCDEFGH
```

## ■ Example Message for Speaker Audio Out

```
□ 1\n20\n5\n13\n81\n4\n1234\n21\nTest\n81\n5\n1\nHallo\n
```

## ■ Example Message for Microphone Audio In

```
□ 1\n20\n5\n13\n21\n0\n1234\n21\nTest\n21\n1\n1\n25000 12000 1000
```

# Computer Network Communication via netcat-Utility

## ■ Example Server

```
□ nc -l -p 30000
```

## ■ Example Client (Netcat Input from Keyboard)

```
□ nc 127.0.0.1 30000
```

## ■ Example Client (Netcat Input from Program Output)

```
□ myprog | nc 127.0.0.1 30000
```