

PCO for LTS filtering

(ID: 6519.022.01.001)

- Basics
- Filters on board
- Soft filters

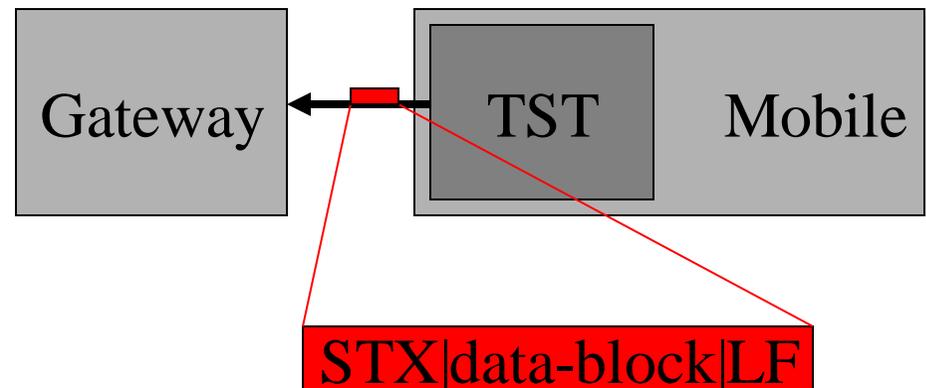
- For communication with the outer world a dedicated entity is used: Testinterface (TST)

⇒ serial port configuration:

- ◆ default baudrate: 38400
- ◆ default flow control: none
- ◆ default data bits: 8
- ◆ default stop bits: 1
- ◆ default parity: none

⇒ data is send in blocks enclosed by

- ◆ StartOfText-Byte (STX): 0x02 ... send before any byte-block
- ◆ LineFeed-Byte (LF): 0x0a ... send after any byte-block

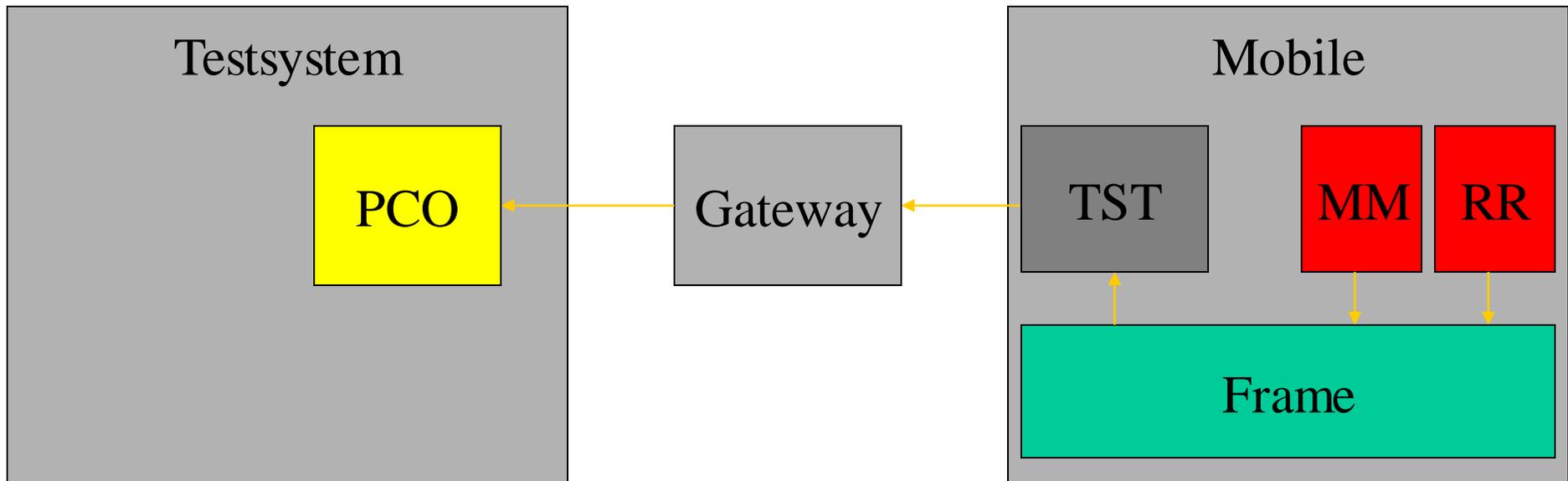


- At Condat we use the following block types:
 - ⇒ Trace ... a text string send by an entity to an outside test system
 - ⇒ Primitive ... a structure send from one entity to another
 - ⇒ Air message ... an encoded structure send within a primitive
- Concerning PCO we distinguish between:
 - ⇒ PCO message ... a message send between PCO components (server, viewer, controller)
 - ⇒ PCO primitive ... a data block coming from mobile -> has to be interpreted by PCO components

- Traces:

⇒ time and size are represented by character numbers (e.g.

| Id | Time | Size | Sender | Receiver | Data |
|----|--------------------|------------------------------------|---------------|----------|--------------|
| 1 | 4 | 4 | 4 | 4 | Size-8 |
| T | <time stamp in ms> | <Number of bytes after this field> | <entity name> | PCO | <ASCII-Text> |

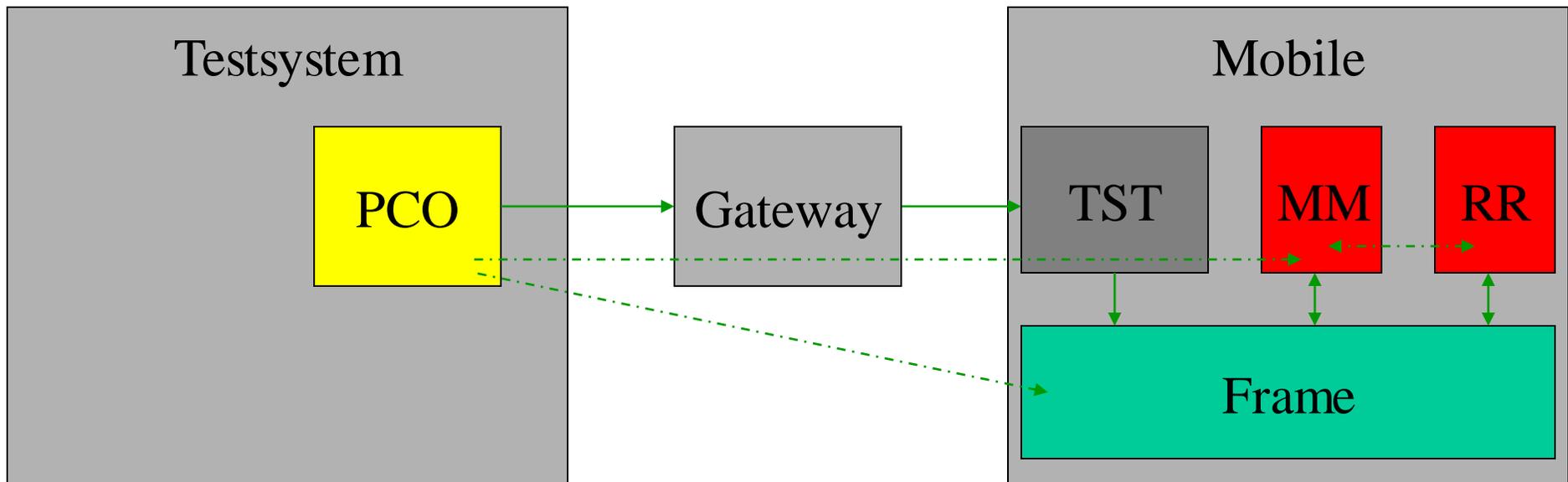


- Primitives:

⇒ time, size and opc are represented by character numbers (e.g.

"1000")

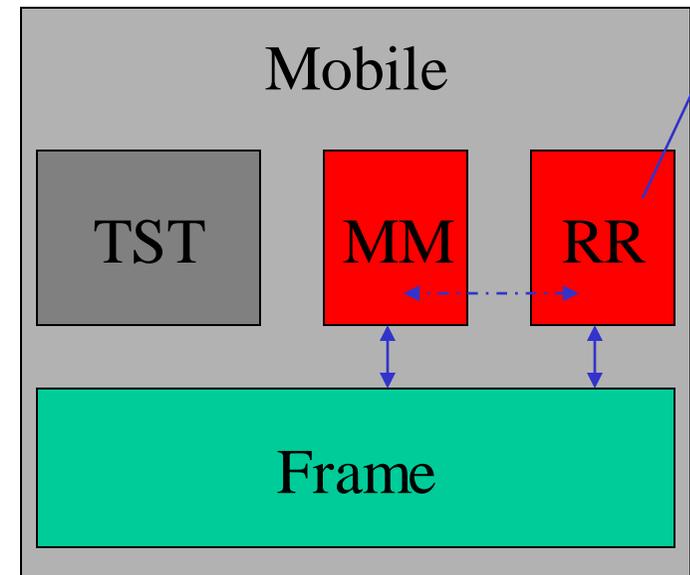
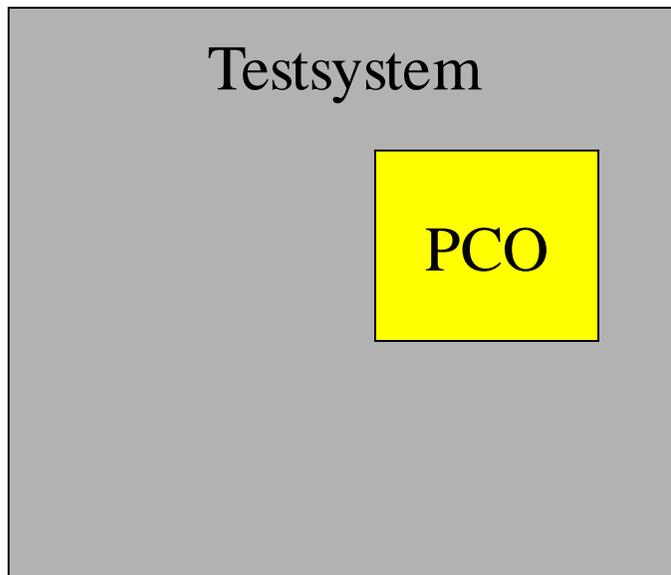
| Id | Time | Size | Sender | Receiver | [Opcode] | Data |
|----|--------------------|------------------------------------|---------------|---------------|-----------------|-------------------------------|
| 1 | 4 | 4 | 4 | 4 | 4 | Size-12 |
| P | <time stamp in ms> | <Number of bytes after this field> | <entity name> | <entity name> | <Opcode number> | <c-structure> or <ASCII-text> |



- Air-messages:

⇒ time, size and opc are represented by character numbers (e.g.

| Id | Time | Size | Sender | Receiver | [Opcode] | Data |
|----|--------------------|------------------------------------|---------------|---------------|-----------------|---|
| 1 | 4 | 4 | 4 | 4 | 4 | Size-12 |
| P | <time stamp in ms> | <Number of bytes after this field> | <entity name> | <entity name> | <Opcode number> | <elements> <sdu> (contains the encoded air-message) |



● PCO messages:

⇒ currently implemented by Syst_prim using T_SYST_PRIM-struct from FRAME/TST

⇒ time and size are represented binary

| Fmt | Hs | Size | TimeS | TimeTenthOfMS | MsgId | Sender | Receiver | Data |
|------------|----------------------|----------------|-------------------------|---|----------------------|------------------|--------------------|-------------------------------------|
| 2 | 1 | 2 | 4 | 2 | 2 | 8 | 8 | Size |
| (not used) | <size of the header> | <size of data> | <time stamp in seconds> | <additional time tenth of milliseconds> | <message identifier> | <Name of sender> | <Name of receiver> | {<ASCII-string> <binary primitive>} |

● PCO primitives:

⇒ currently same structure as PCO messages

- ◆ for direct Testing with xPanel or TAP ok, since the testinterface reformats the incoming binary-blocks into a T_SYST_PRIM-structure
- ◆ for LTS this could be done by PCO-server but maybe with new structure (e.g. because of time stamp issues)
- ◆ ... or the viewer would have to interpret PCO-primitives as binary-blocks itself

- Advantages of filtering on mobile already:

- ⇒ traffic reduction

- ⇒ necessary to receive primitives/air-messages

- Usage:

- ⇒ several CONFIG-primitives ('S' as first header byte) are send to the mobile

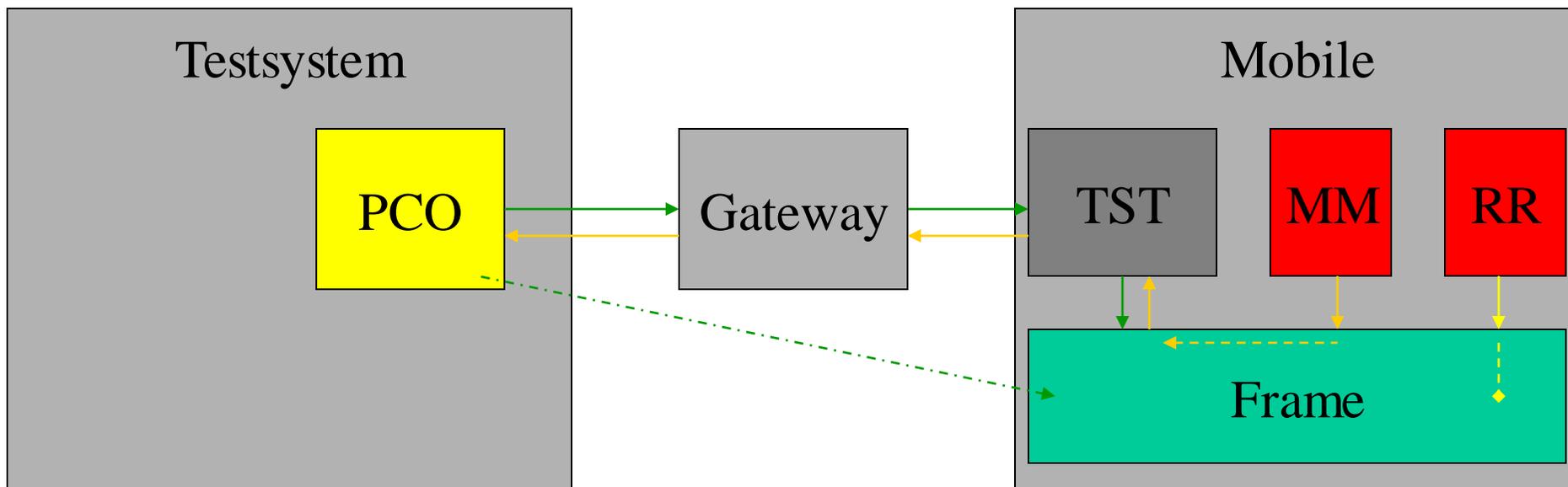
| Id | Time | Size | Sender | Receiver | Data |
|----|--------------------|------------------------------------|-----------------------------|---------------|-----------------------|
| 1 | 4 | 4 | 4 | 4 | Size-8 |
| S | <time stamp in ms> | <Number of bytes after this field> | <entity name> (e.g. PCO) | <entity name> | <ASCII-config-string> |

- Trace filters:

⇒ config string of form “TRACECLASS <ClassMask>” sent to an entity

⇒ example: “TRACECLASS FF” --> MM
“TRACECLASS 00” --> RR

```
#define TC_FUNC      0x01
#define TC_EVENT    0x02
#define TC_PRIM     0x04
#define TC_STATE    0x08
#define TC_SYSTEM   0x10
#define TC_ISIG     0x20
#define TC_ERROR    0x40
```

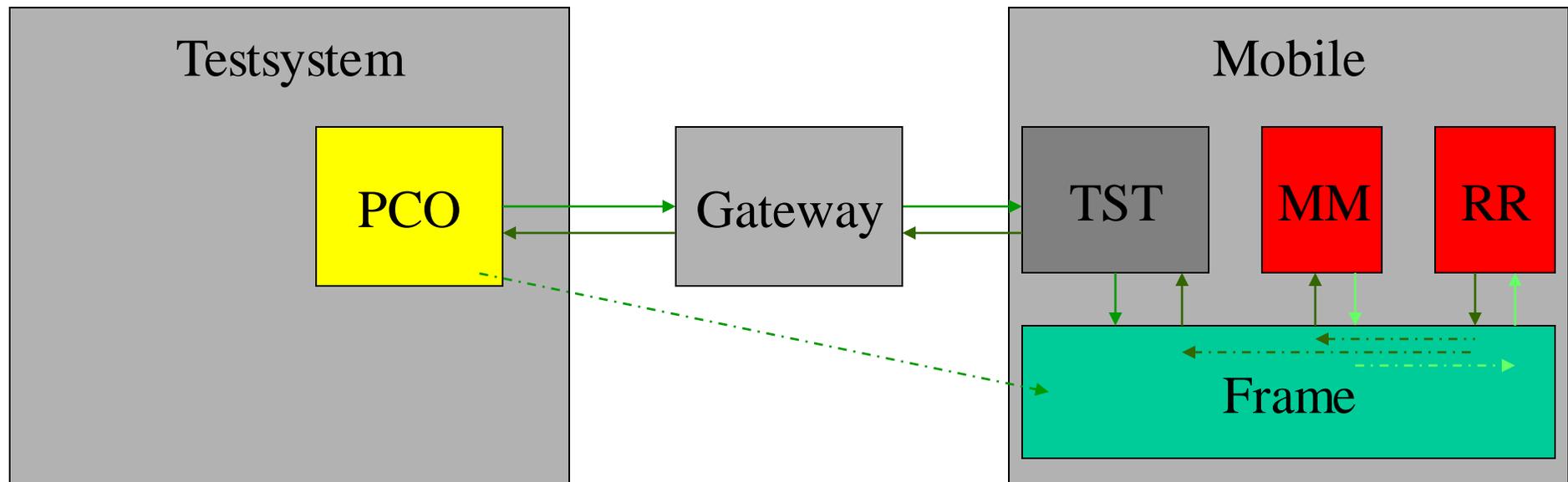


- Primitive filters:

- ⇒ config string of form

- “{<OrgDestination>|ALL}[<opc mask>] <AddDestination>”
sent to an entity

- ⇒ example: “DUPLICATE MM PCO” --> RR

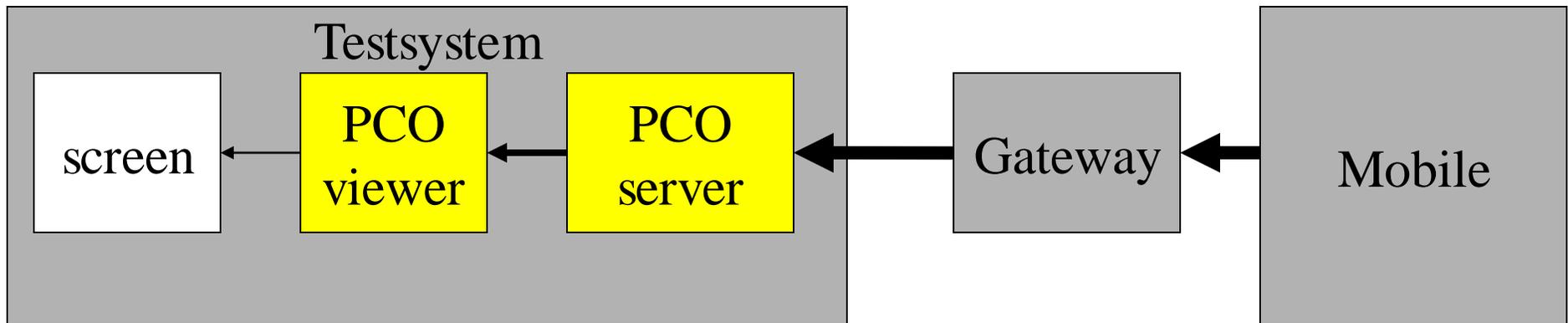


- Advantages of filtering on test system side:

- ⇒ filter on primitive structure level
- ⇒ filter on air-message level

- Usage:

- ⇒ implementation on PCO-server or PCO-viewer



- ◆ on primitive level (sender, receiver, OPC)
- ◆ on primitive structure level -> CCDEdit needed
- ◆ on air message level -> CCDEdit and CCD needed