

PCO for LTS filtering

(ID: 6519.022.01.001)

- Basics
- Filters on board
- Soft filters

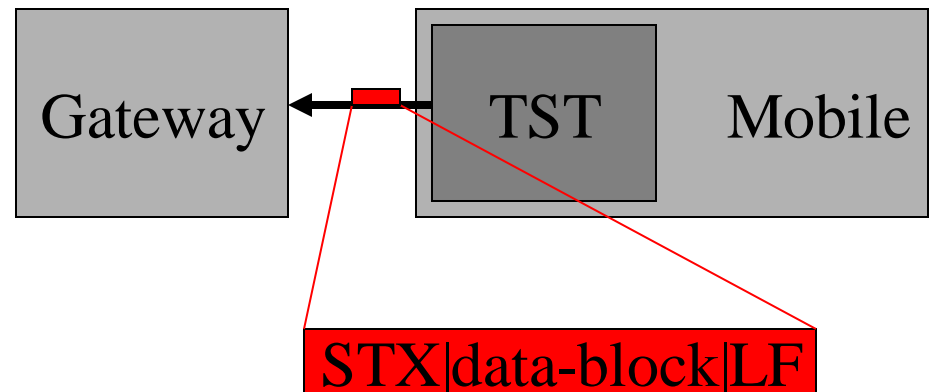
- For communication with the outer world a dedicated entity is used: Testinterface (TST)

⇒ 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

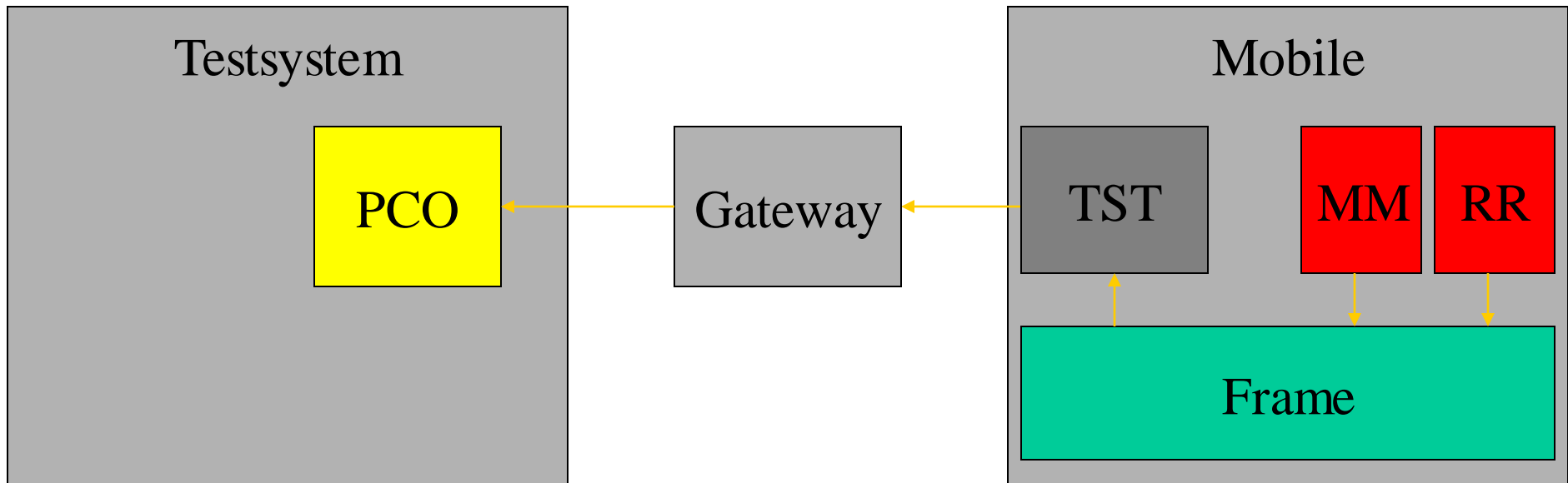


- At Condat we use the following block types:
 - ⇒ Trace ... a text string send by an entity to an outside test system
 - ⇒ Primitive ... a structure send from one entity to another
 - ⇒ Air message ... an encoded structure send within a primitive
- Concerning PCO we distinguish between:
 - ⇒ PCO message ... 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>

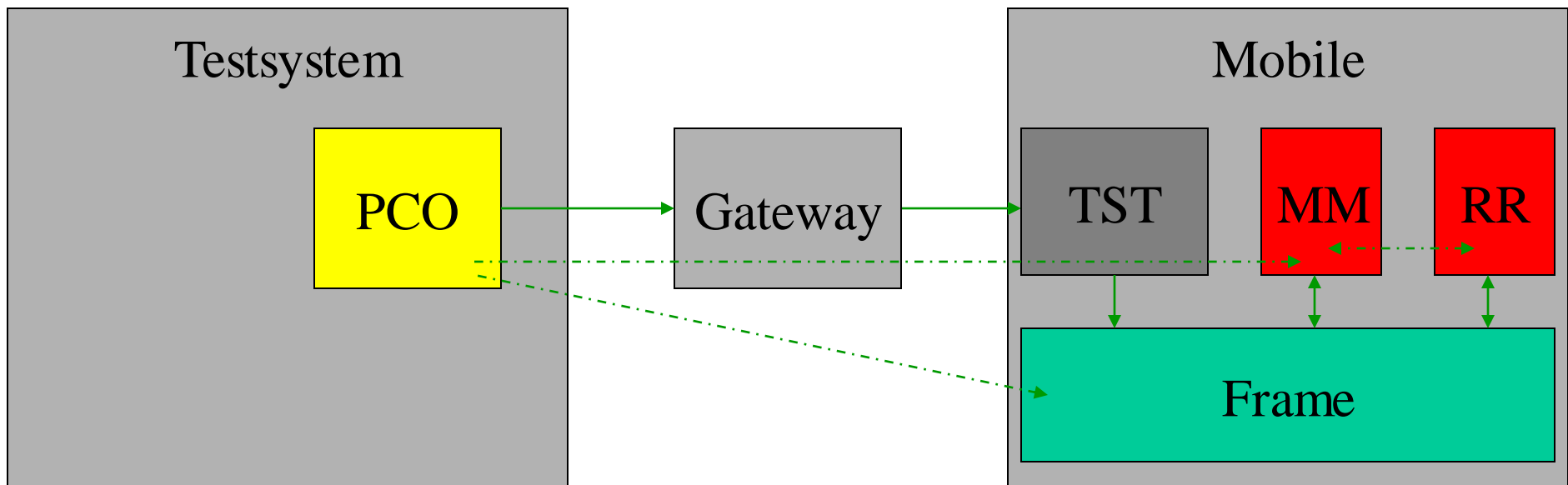


● Primitives:

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

"1000")

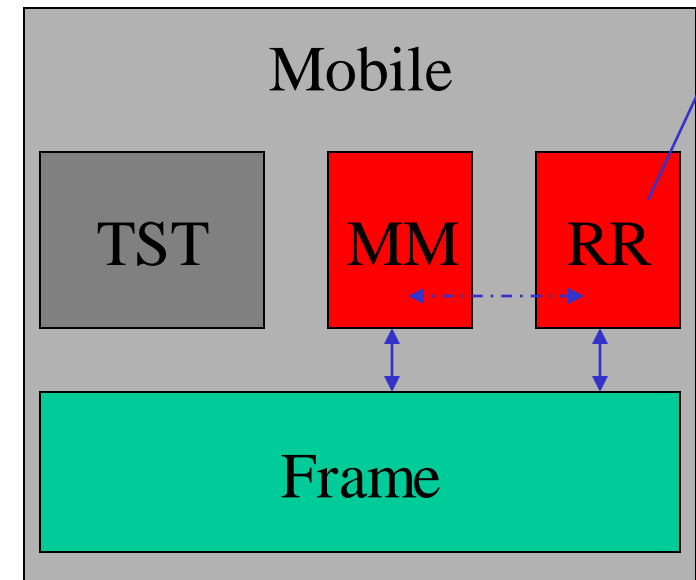
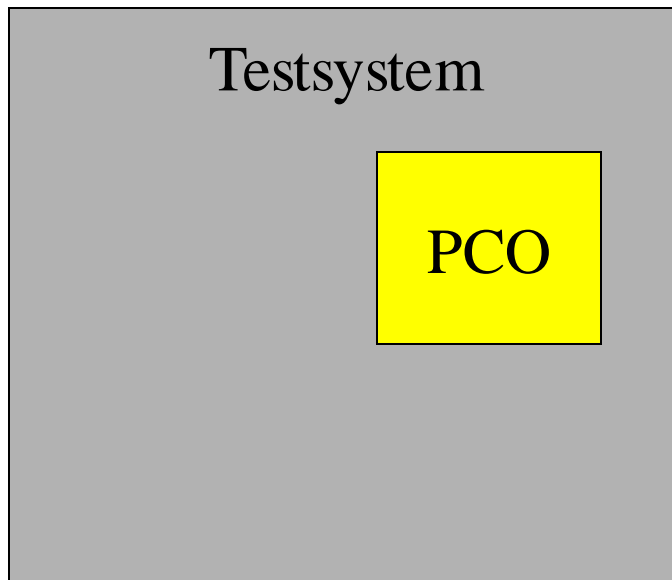
Id	Time	Size	Sender	Receiver	[Opcode]	Data
1	4	4	4	4	4	Size-12
P	<time stamp in ms>	<Number of bytes after this field>	<entity name>	<entity name>	<Opcode number>	<c-structure> or <ASCII-text>



● 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

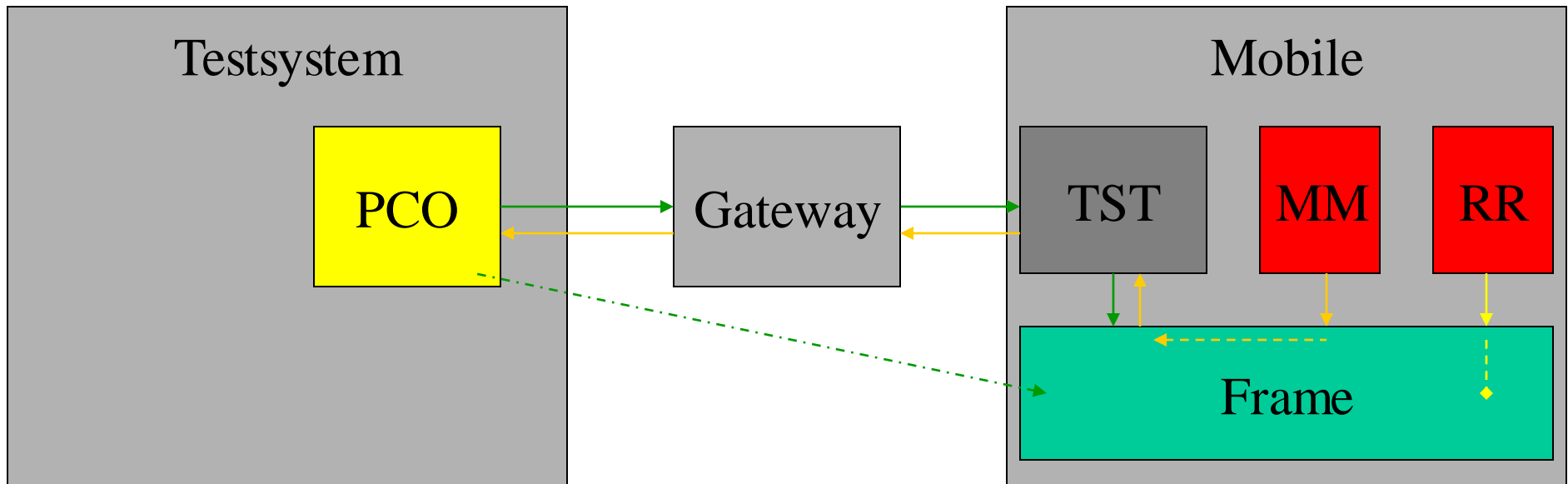
Id	Time	Size	Sender	Receiver	Data
1	4	4	4	4	Size-8
S	<time stamp in ms>	<Number of bytes after this field>	<entity name> (e.g. PCO)	<entity name>	<ASCII-config-string>

● 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
```

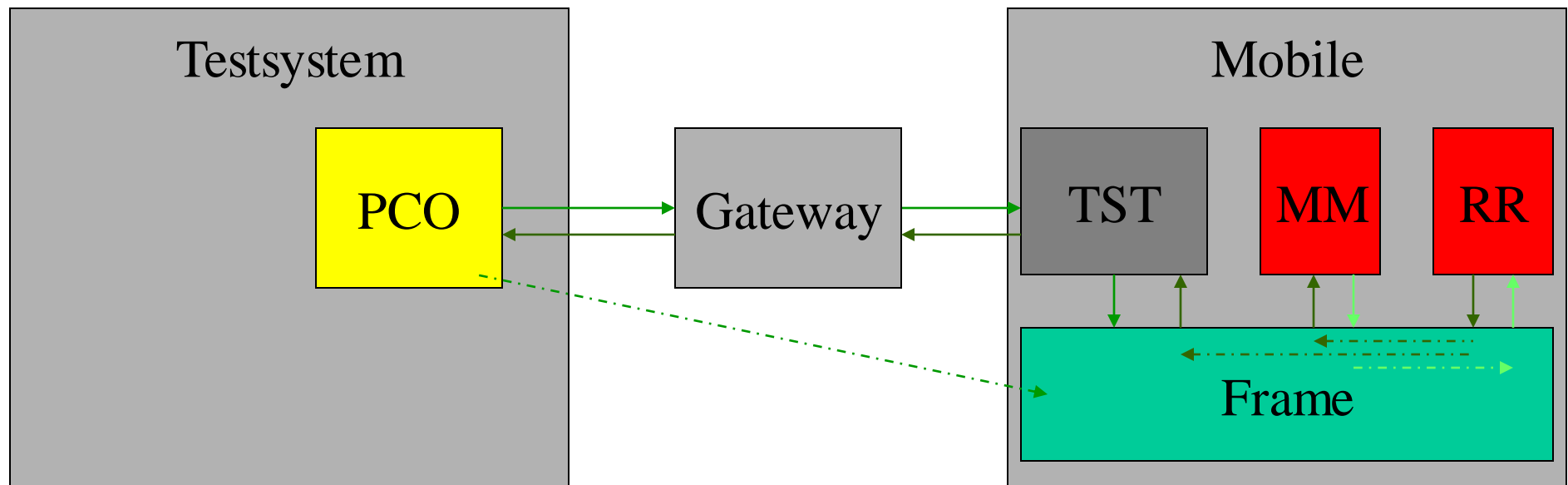


- Primitive filters:

- ⇒ config string of form

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

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

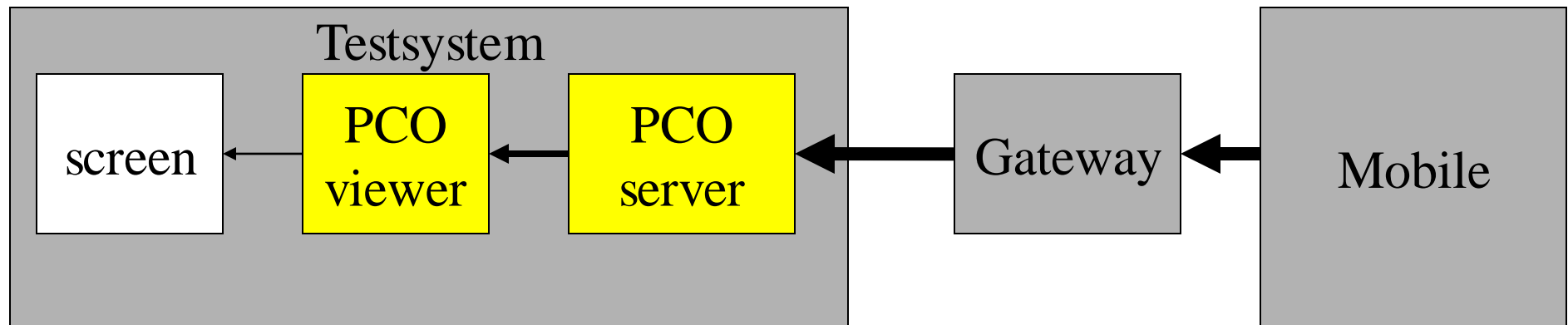


- Advantages of filtering on test system side:

- ⇒ 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