

LMAP Framework

draft-ietf-lmap-framework-03

Philip Eardley

Examples of Measurement Agent and Measurement
Peer (to help clarify terminology)

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After discussions at London IETF-89

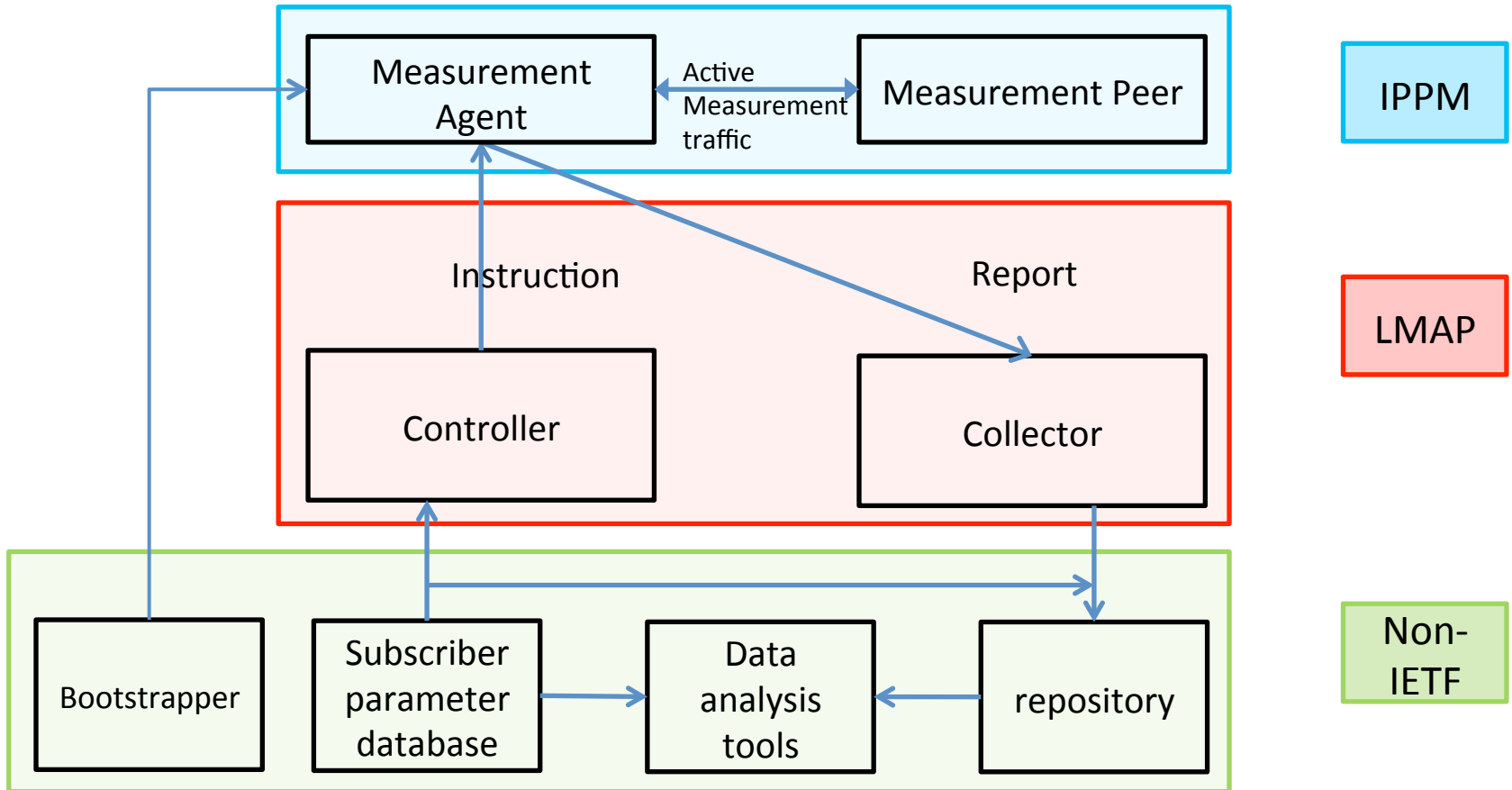
- Aims
 - Clarify the meaning of “Measurement Agent” and “Measurement Peer”
 - Give some examples of the terminology ‘in action’, so as to clarify the meanings
 - NOTE: there is no intention to create an exhaustive set of examples!

MA vs MP

(Measurement Agent vs Measurement Peer)

- Basic distinction between MA and Measurement Peer
 - MA interacts with Controller and Collector
 - MP doesn't
- Revised definitions (note, MA & MP are functions)
 - Measurement Agent (MA): The function that receives Instructions from a Controller, performs Measurement Tasks (perhaps in concert with one or more other Measurement Agents or Measurement Peers) and reports Measurement Results to a Collector
 - Measurement Peer: A function assists a Measurement Agent with ~~Active Measurement Tasks~~ ~~but has no Controller interface~~; other interfaces are undefined
 - Could be just an ordinary web server
 - Active Measurement Task – to be done – note that Active Task may send test traffic between MA and MP or between MA and another MA
 - I'm no longer convinced that we (LMAP) need to define Active and Passive (it's good enough just to define Measurement Task)

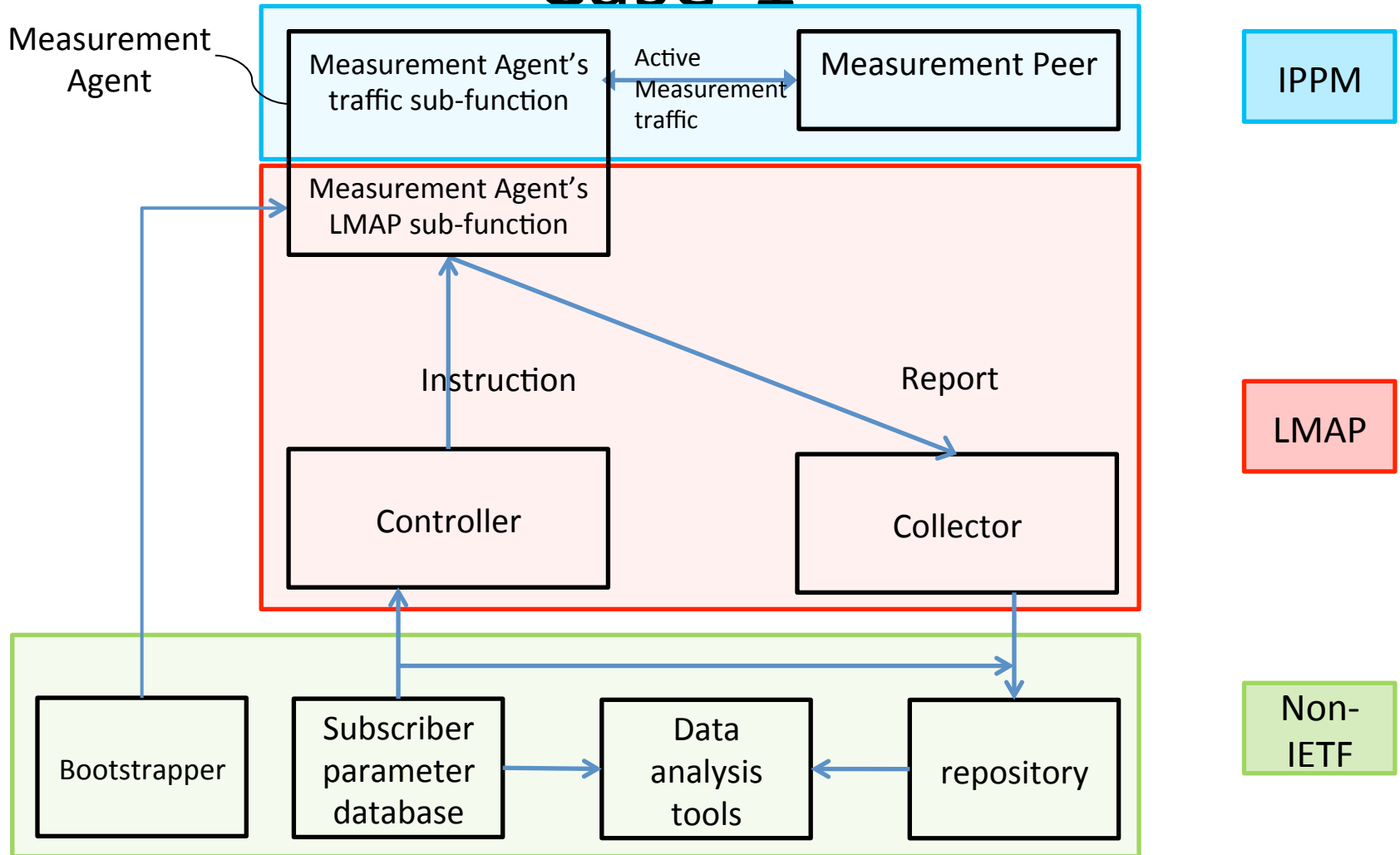
Case-1



- This is the picture in -03

- Let's re-draw the picture in -03, to clarify that the Measurement Peer has no LMAP interfaces

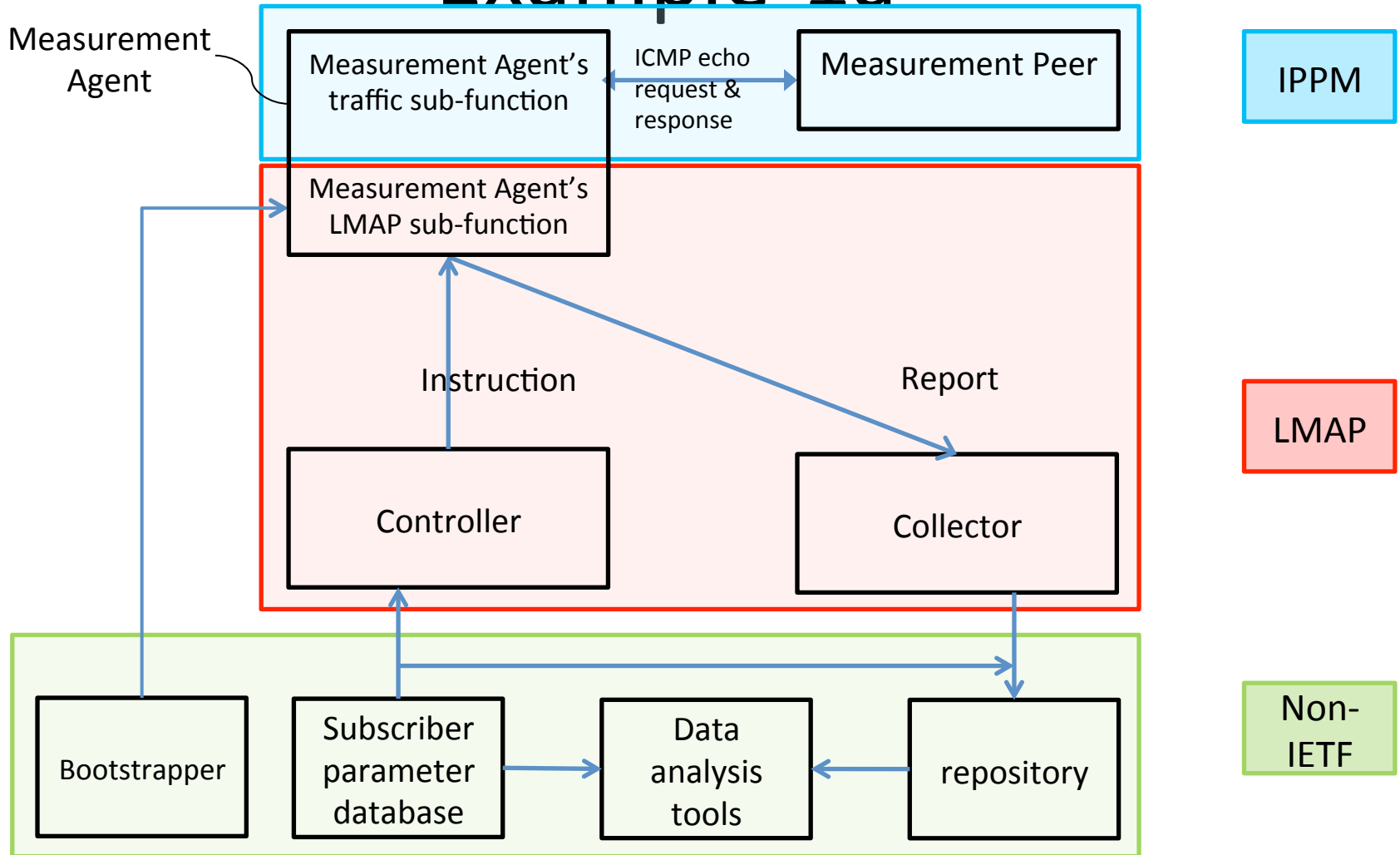
Case-1



- Let's re-draw the picture in -03, to clarify that the Measurement Peer has no LMAP interfaces

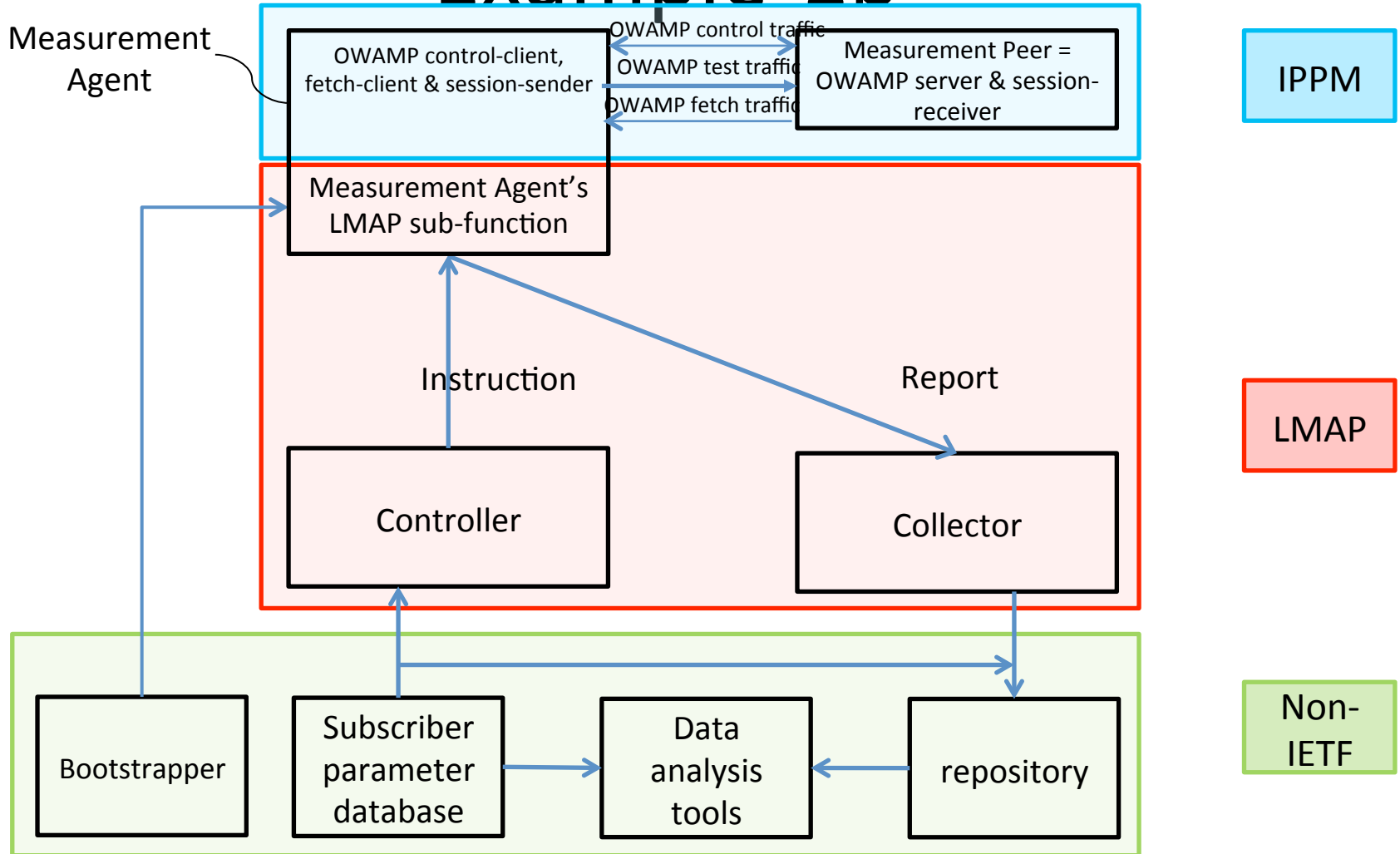
- Now for some examples

Example-1a



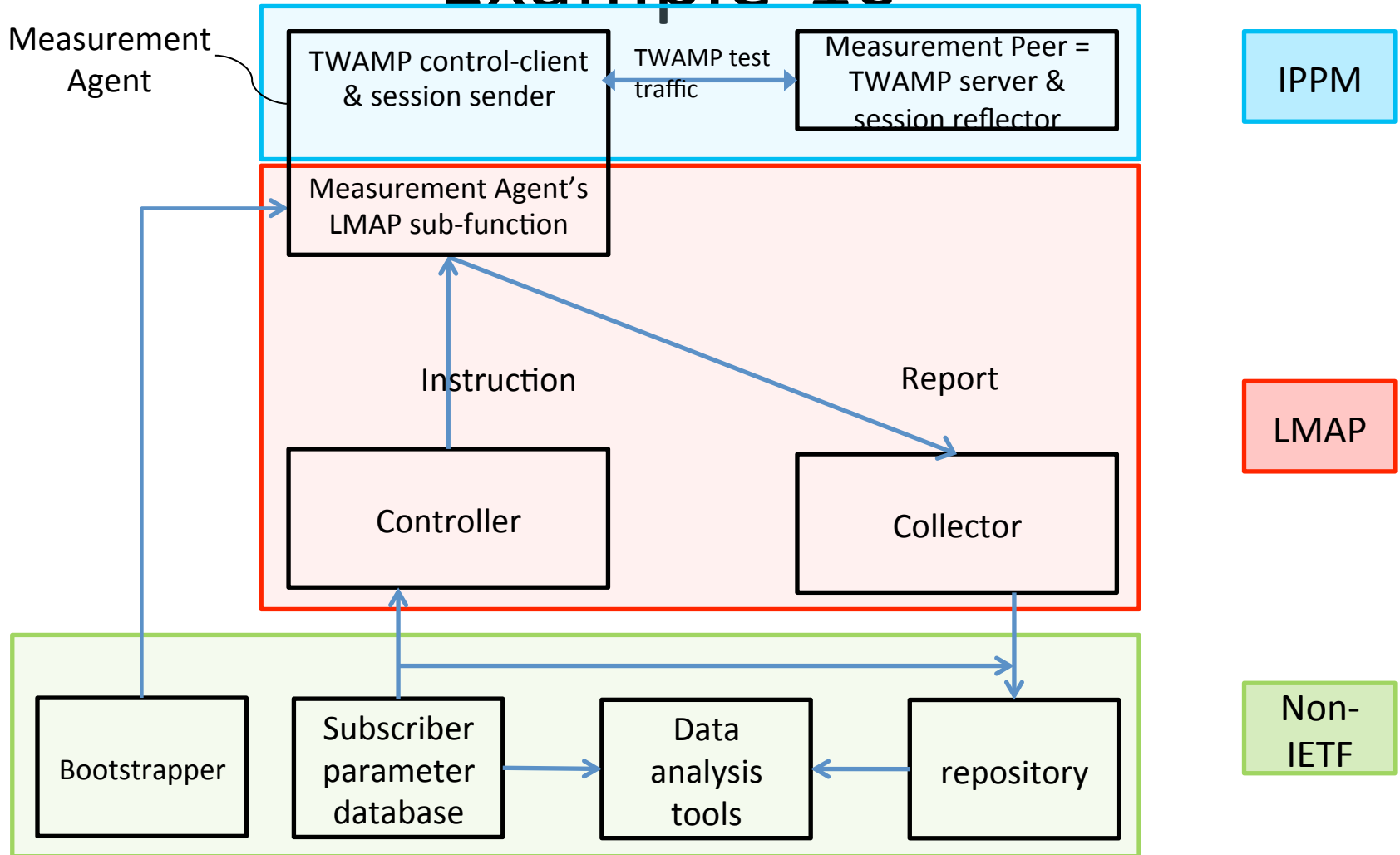
- Ping is sent according to LMAP schedule
- Could show a similar example with traceroute, where each router replies with ICMP Time Exceeded and so acts as a Measurement Peer

Example-1b



- Owamp sent according to LMAP schedule

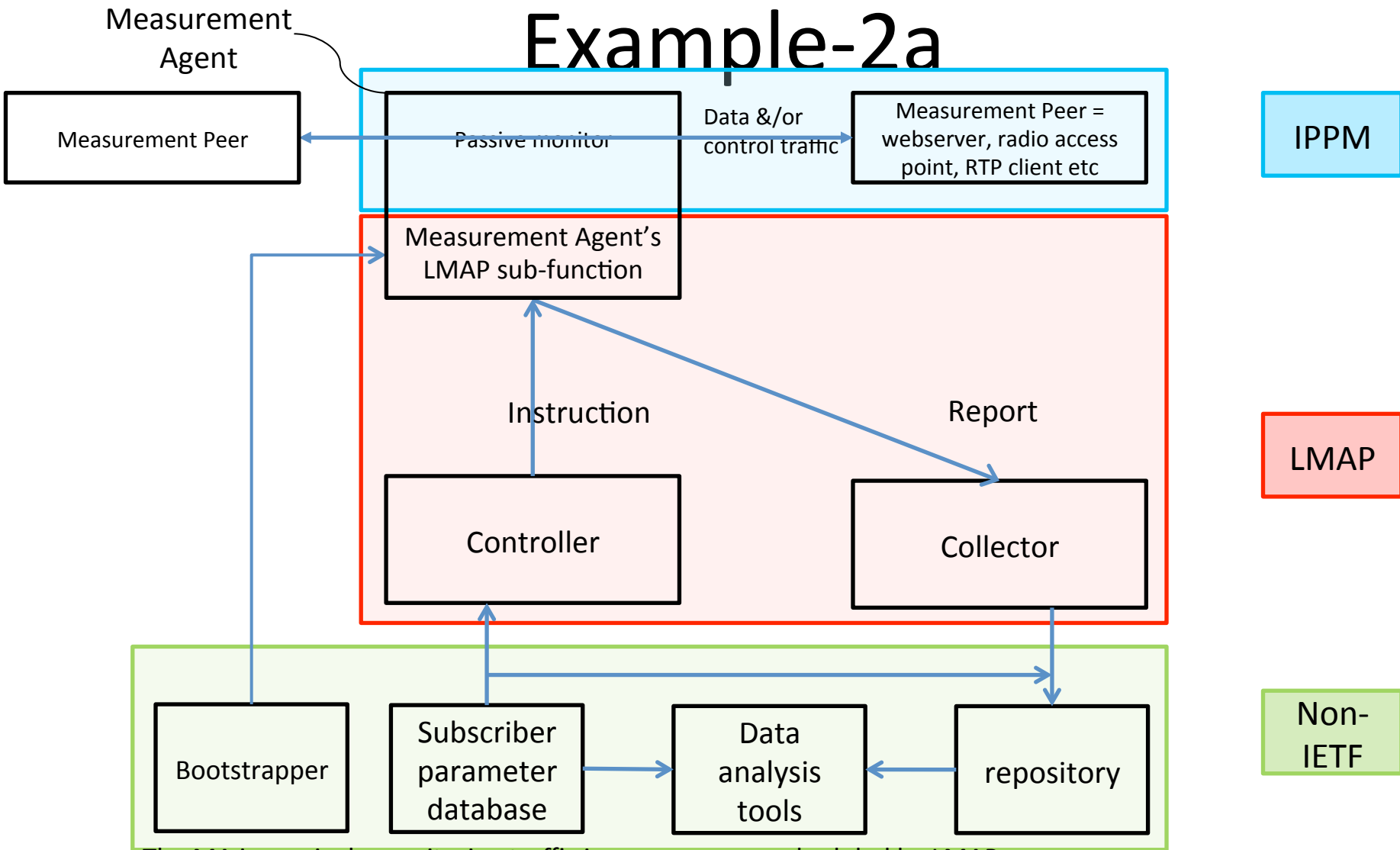
Example-1c



- twamp sent according to LMAP schedule

- Let's look at some examples where the MA performs a passive measurement task
- In the past, we might have shown this with only a MA, but with our new definition of Measurement Peer (“A function that assists a MA with Measurement Tasks...”), even a passive Measurement Task involves Measurement Peer(s).

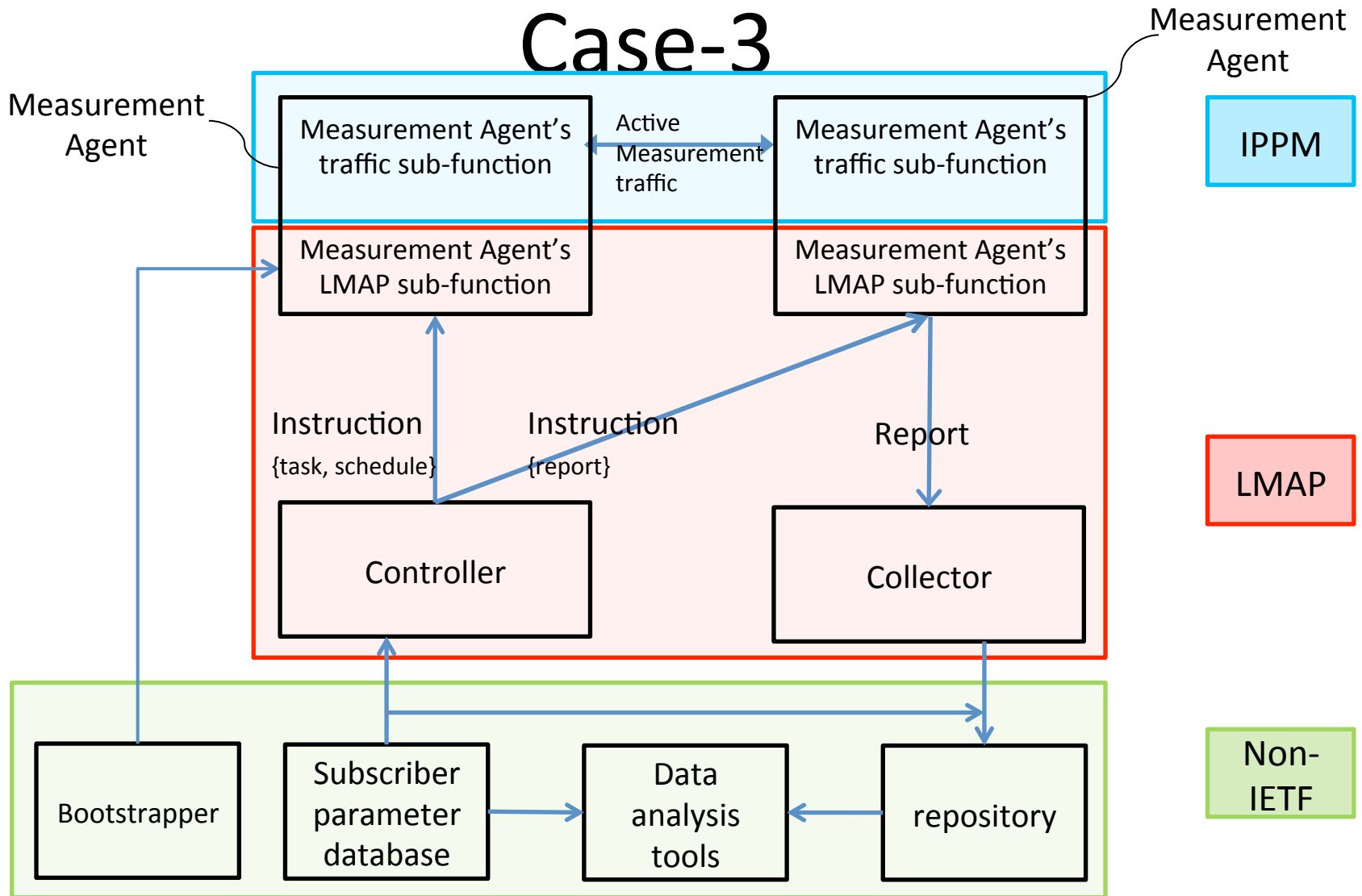
Example-2a



- The MA is passively monitoring traffic in some way, as scheduled by LMAP
- Measurement Peer sends traffic – perhaps data traffic (imagine the MA is on a router in the network) or perhaps control traffic (imagine a MA on a mobile device and monitoring wireless beacons).
- A MA doing deep packet inspection effectively has a very large and open number of M Peers
- Note that Peers are not controlled by LMAP
- Possible for Peer to be on same device as MA (but if it's controlled by LMAP we have case 1)

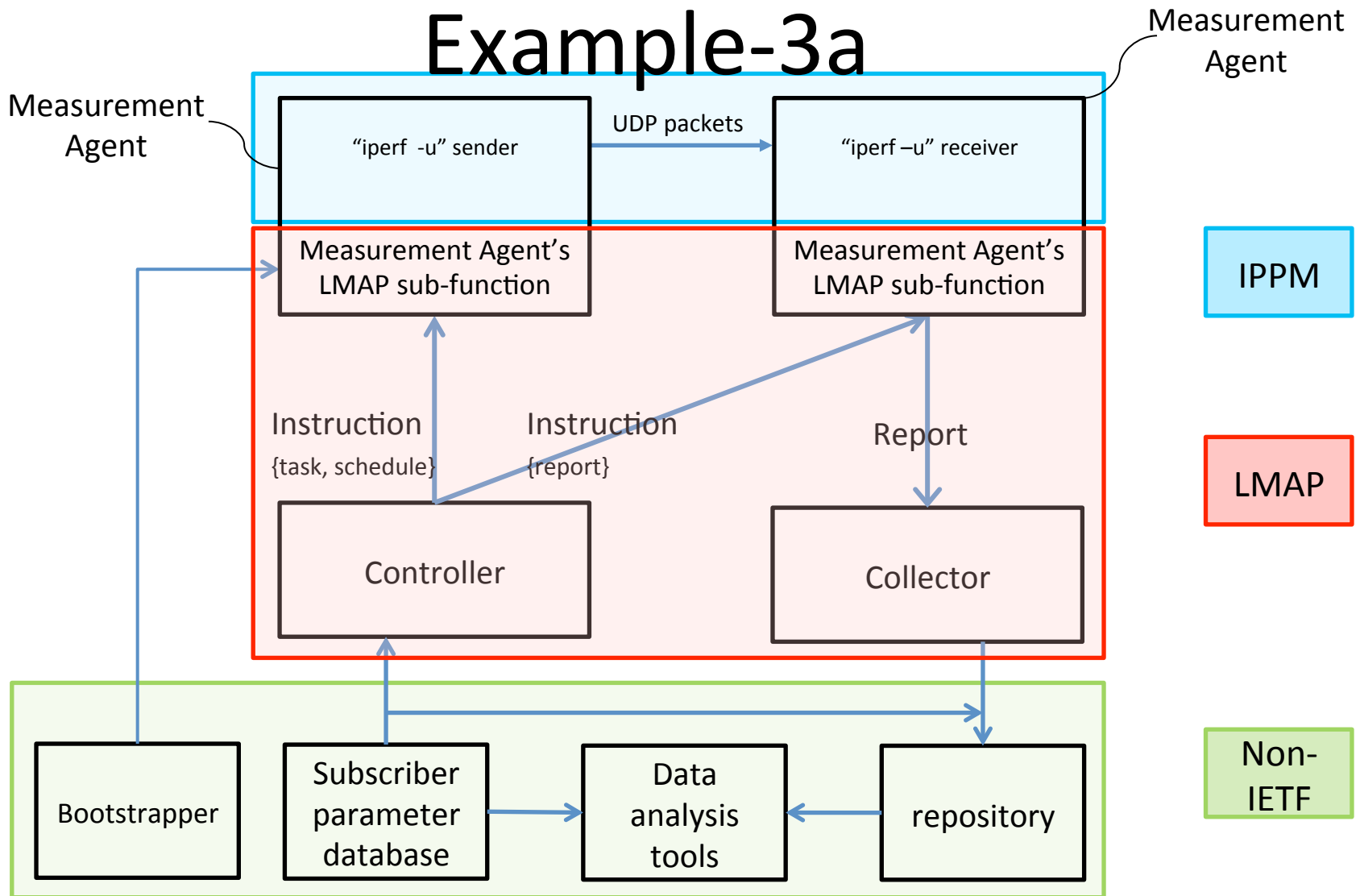
- we may also have a case with two Measurement Agents (and no Measurement Peers)
 - This case is not allowed in -03

Case-3



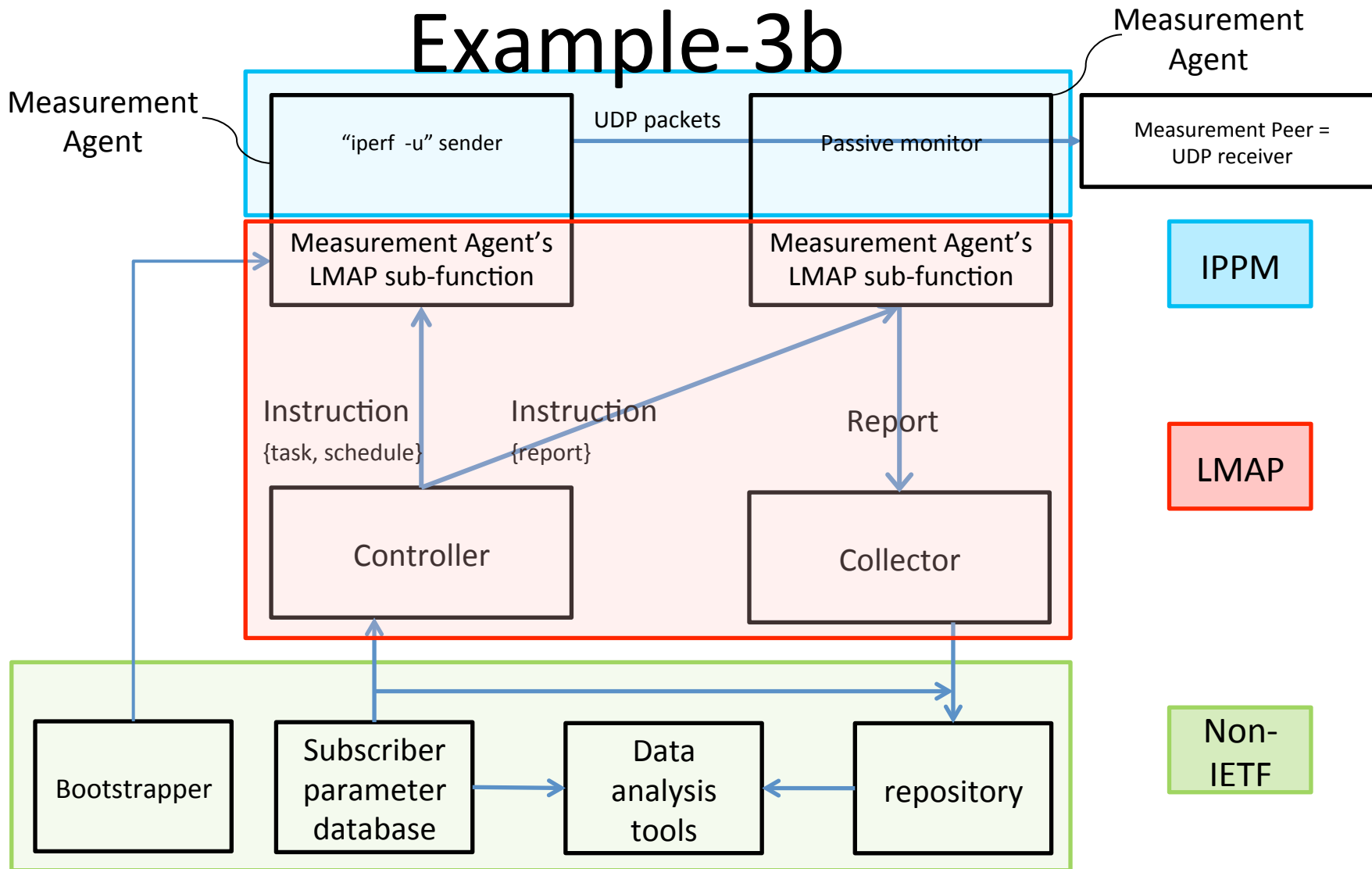
- Not allowed in -03; this is now also allowed

Example-3a



- "iperf -u" sends UDP packets from sender (or client) to receiver (or server).
- Unlike OWAMP, the measurement results associated with the UCP packet transfer are not returned to the MA on the left. Instead the MA on the right directly reports them to the Collector

Example-3b



- Example where the MA on the right performs passive measurement task – it isn't an iperf receiver, but simply monitors UDP packets