

Requirements document for E2E piPES MDI

P. D. Meador

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This document describes the requirements for a Monitoring Domain Interface in an E2E piPES environment.

1 Preliminaries

1.1 Version

19 January 2004 Preliminary version.

29 January 2004 Rewritten with PMC public-facing instead of MDI-facing.

17 February 2004 Rewritten to take into account issues from last phone conference.

1.2 Abbreviations, acronyms and glossary

MDI Monitoring Domain Interface PMC Performance Monitoring Controller PMP Performance Monitoring Point

2 Overview

1. An MDI is the first public point of access for a monitoring system. An MDI may be contacted by a client requesting a measurement.
2. The MDI authenticates the client and provides a token indicating the client's Role within the monitoring system. The token can be used to authorise the client with the PMC.
3. If the MDI decides that a new measurement may be made, it indicates the PMC that should be

contacted to make the new measurement and also provides some way for the client to prove to the PMC that it is authorised to request a measurement.

4. The client then contacts the PMC, passing its request for a new measurement.
5. The PMC and the rest of the monitoring system coordinate to decide on tools and settings and ensure that measurements do not interfere with each other, do not interfere with the smooth running of the network and so on.
6. The PMC eventually returns the results of the measurement to the client.

3 Public-facing MDI components

Public facing components are those required to communicate with general clients.

1. AAA must be supported: the client should supply some form of credential to authenticate itself.
2. The MDI must be able to provide contact details and authorisation tokens to the client, so that the client may contact the appropriate PMC.

4 Inter-domain components

Inter-domain components are those required for communication between different administrative domains. In an environment where this is needed, it

seems clear that the PMC would contact the appropriate interdomain interface, which would probably be situated on a PMC within the second domain. Accordingly, in this section the client of the interdomain interface will be known as the initiator PMC, and the host of the inter-domain interface will be known as the acceptor PMC.

1. Each PMC must be able to negotiate certain settings, such as the tool to use, when a request is made by another PMC.
2. PMCs must be able to identify themselves to each other; AAA must be supported.
3. The acceptor PMC must be able to return a token to the initiator which will be used by the monitoring points to identify and authorise themselves to each other.
4. The PMCs may not be able to make guarantees as to the values of certain parameters (such as, for example, the timing of the measurement). This must be supported in the inter-domain protocols.

5 Public-facing PMC components

This section relates to the interfaces of the monitoring points (PMCs) themselves. The monitoring point will be contacted by clients who have been given an authorising token by the MDI. It is assumed that the PMC itself handles simple scheduling to avoid concurrent tests.

1. The interface must support some sort of AAA to avoid misuse. The interface should accept the token passed to the client by the MDI, and use it to authorise actions based on some policy.
2. The interface must accept a request for a new measurement, and will then decide whether to make a new measurement or deny access according to the client's credentials (role).

3. There are many delays involved in the making of a measurement on the PMC: measurements may be delayed until a free slot turns up; the measurements themselves are not instant; and other delays may also occur. The interface must report the state of a measurement as it is handled by the scheduling system or being made.
4. The interface must respond to polled requests for updates in the status of a measurement request.
5. Therefore, the interface must return an identifying reference for the measurement in response to the initial request.
6. The results of all measurements must be returned to the client.
7. The interface must be lightweight so that measurements are perturbed as little as possible.

6 Message requirements

1. Messages should, where possible, use standardised formats.
2. Specifically, the NMWG request and response schemas should be used whenever possible.