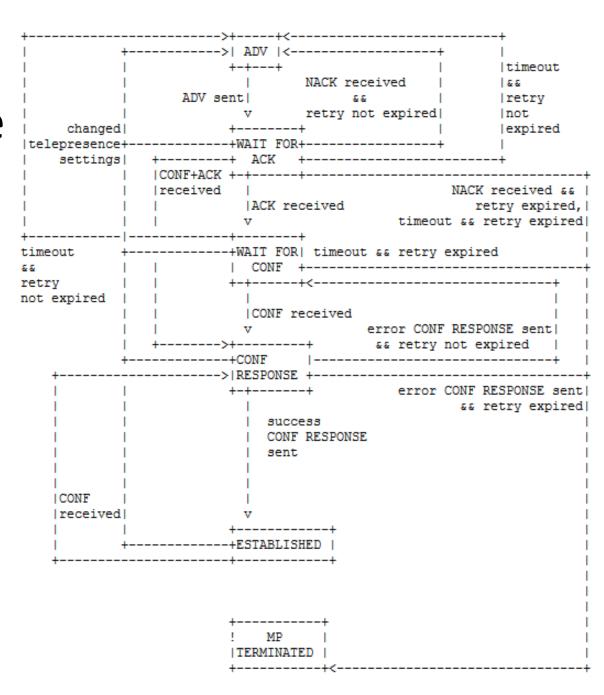# CLUE protocol v. 4

IETF 93, Prague
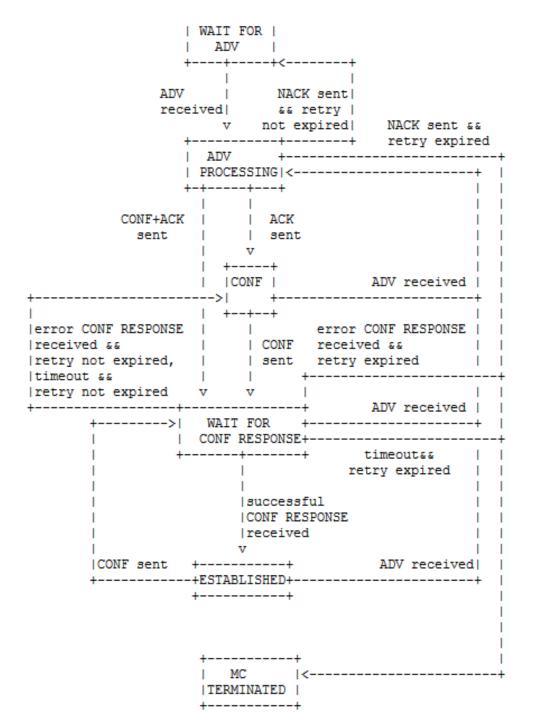
Roberta Presta and **Simon Romano**

Main diff with v. 03

- State machines reviewed and related descriptions aligned with the diagrams
  - Major revision
- Response codes section updated
- Applied recommended updates
  - suggested by Christian Grove in his review (2015-03-19)
  - document aligned with framework definitions
- ➔ ready for WG last call

MP state machine

```
+------------------------>+----+<------------------------+
|                +----------->| ADV |<------------------+        |
|                |           +-+---+                    |        |timeout
|                |             |         NACK received  |        |&&
|                |       ADV sent|            &&         |        |retry
|                |             v        retry not expired|       |not
|     changed|             +--------+                    |        |expired
|telepresence+-------------+WAIT FOR+------------------+         |
|   settings|   +--------+   ACK   +------------------------+
|               |  |CONF+ACK +-+------+-------------------------------+
|               |  |received  |                  NACK received && |
|               |  |          |ACK received         retry expired,|
|               |  |          v           timeout && retry expired|
+-----------|------------+--------+                                |
timeout     +-------------+WAIT FOR| timeout && retry expired      |
&&          |  |          | CONF  +-------------------------------+
retry       |  |          +-+------+<------------------------------+
not expired |  |            |                                  |   |
|           |  |            |CONF received                     |   |
|           |  |            v             error CONF RESPONSE sent|  |
|      +---------->+----------+              && retry not expired  |  |
|      +-------------+CONF    |-------------------------------+
+------------------->|RESPONSE +-------------------------------+
|      |           +-+-------+        error CONF RESPONSE sent|
|      |             |                         && retry expired|
|      |             | success                                |
|      |             | CONF RESPONSE                          |
|      |             | sent                                   |
|      |             |                                        |
|      |             |                                        |
|CONF  |             |                                        |
|received|           v                                        |
|      |           +-----------+                              |
|      +-------------+ESTABLISHED |                            |
+---------------------+-----------+                           |
                                                              |
                                                              |
                      +----------+                            |
                      !   MP     |                            |
                      |TERMINATED |                           |
                      +----------+<---------------------------+
```

MC
state machine

```
                              |  WAIT FOR |
                              |     ADV   |
                            +----+-----+<--------+
                               |                 |
                   ADV         |      NACK sent|
                   received|          && retry |
                            v      not expired|        NACK sent &&
                    +----------+--------+            retry expired
                    |  ADV     +-------------------------------+
                    | PROCESSING|<---------------------+  |
                    +-+-----+---+                      |  |
                       |     |                         |  |
           CONF+ACK     |     |   ACK                   |  |
             sent      |     |   sent                  |  |
                       |     v                         |  |
                       |   +-----+                     |  |
                       |   |CONF |        ADV received  |  |
        +----------------------->|     +---------------------------+  |
        |              |   +--+--+                      |  |
        |error CONF RESPONSE |     |      error CONF RESPONSE |  |
        |received &&        |     | CONF   received &&      |  |
        |retry not expired, |     | sent   retry expired    |  |
        |timeout &&         |     |      +---------------------+
        |retry not expired  v     v      |              |  |
        +------------------+---------------+       ADV received |  |
            +--------->|   WAIT FOR    +--------------------+  |
            |          |  CONF RESPONSE+----------------------+
            |          +-------+-------+       timeout&&      |  |
            |                  |              retry expired   |  |
            |                  |                              |  |
            |                  |successful                    |  |
            |                  |CONF RESPONSE                  |  |
            |                  |received                       |  |
            |                  v                              |  |
        |CONF sent   +-----------+        ADV received|  |
        +------------+ESTABLISHED+---------------------+  |
                     +-----------+                         |
                                                           |
                                                           |
                                                           |
                     +-----------+                         |
                     |    MC     |<----------------------+
                     |TERMINATED |
                     +-----------+
```

Response codes

- Response codes are defined as a sequence of three digits. Specific semantics associated with the first digit.
- Response codes that do not begin with "2" or "1" indicate an error response
  - Response codes beginning with "3" indicate problems with the XML content of the message ("Bad syntax", "Invalid value", etc.)
  - Response codes beginning with "4" refer to problems related to CLUE protocol semantics ("Invalid sequencing", "Version not supported", etc.)
  - Response codes beginning with "2" are associated with successful responses.
  - Response codes beginning with "1" could be associated with temporary responses
- Further response codes can be designed in future versions of the protocol, provided that:
  - they do not override the ones herein defined
  - they respect the semantics of the first code digit

Document reviews

- We got two reviews so far:
  - Mark Duckworth:
    - no major issues identified
    - minor comments and questions
  - Rob Hansen:
    - the schemas and protocol look solid and workable
    - a couple of minor quibbles with the state machines
- …already working on such comments
  - expect a new version ("last-call-ready") of the draft to be issued in a week or so