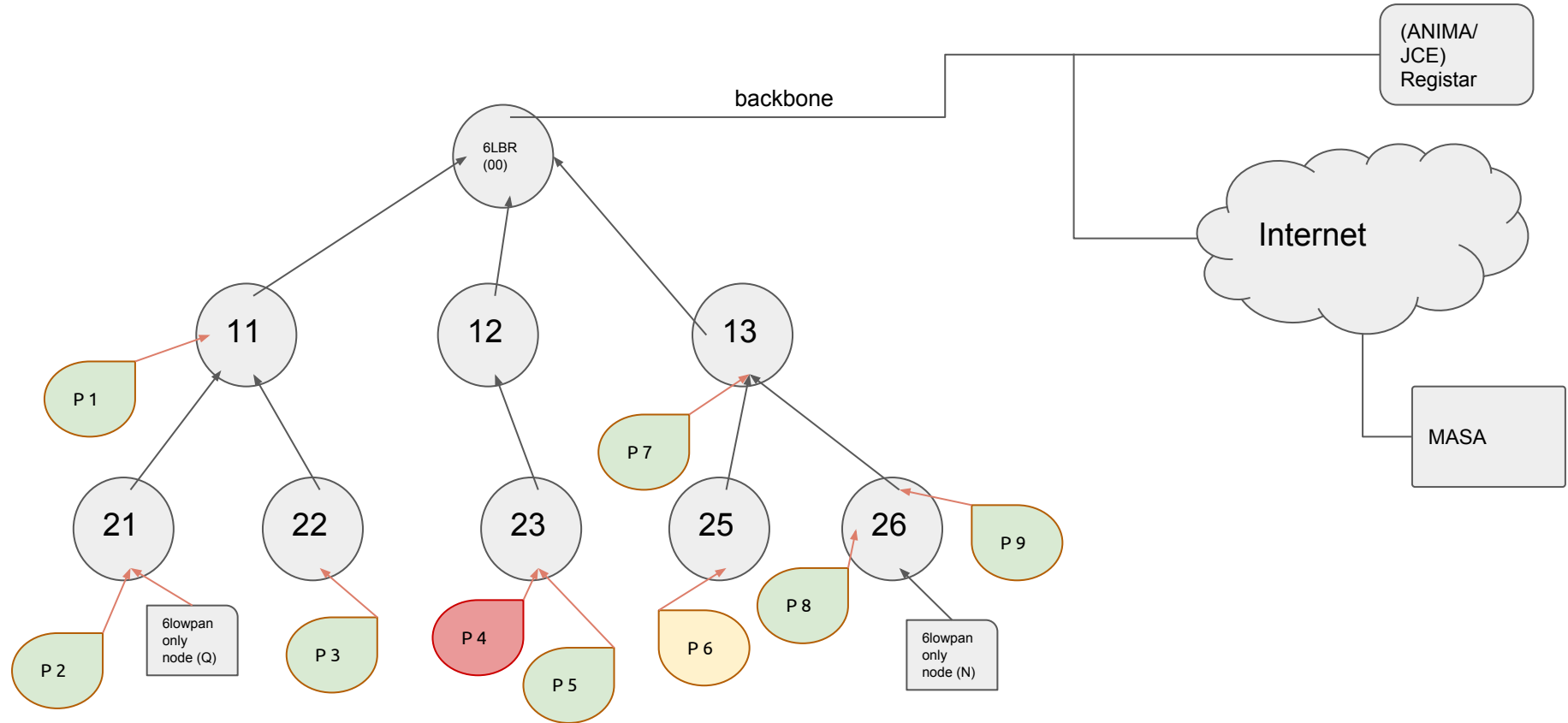


6tisch join bandwidth problem description



Explanation

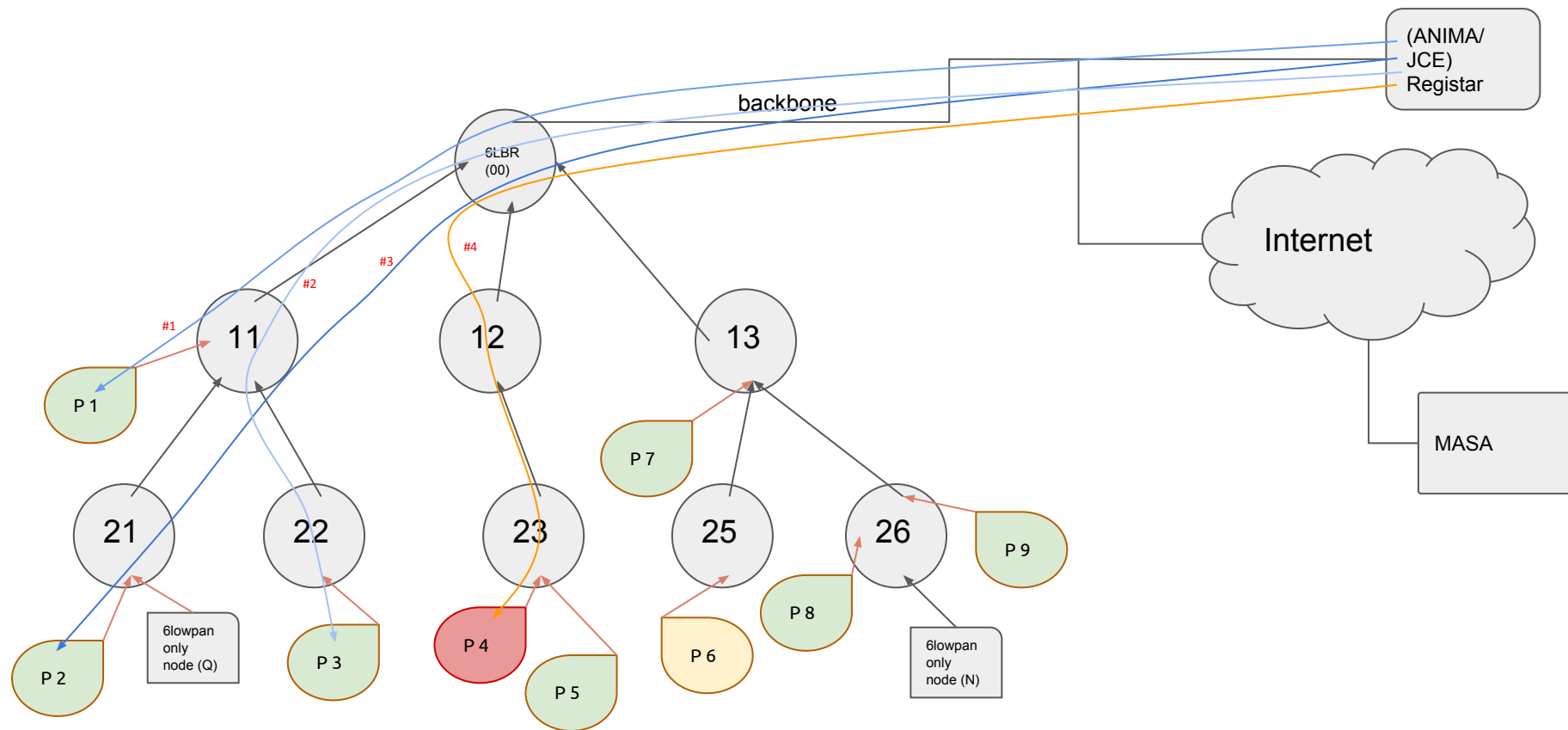
Nodes P1 to P9 are trying to join the network.

Ideally, each would be given a time at which they should join.

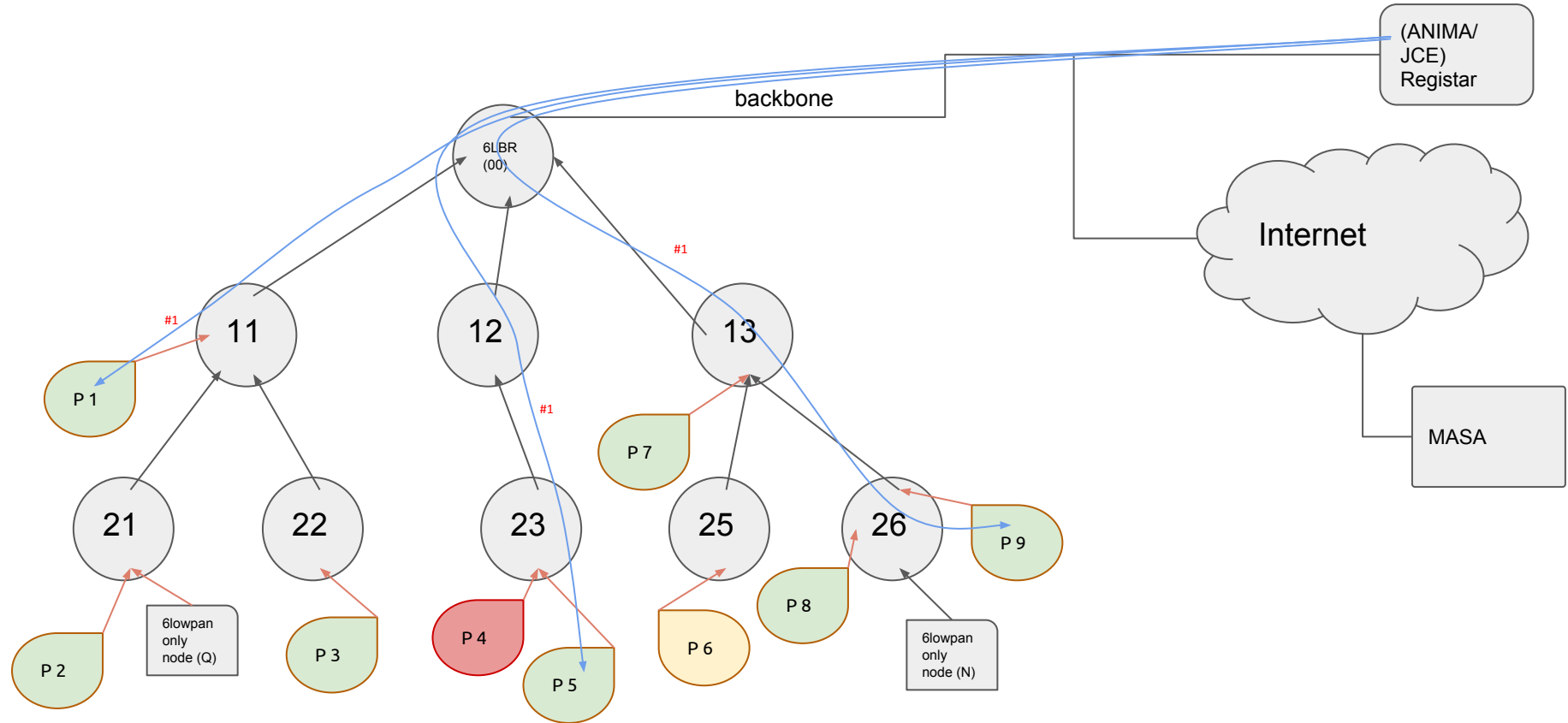
Priority should be given to nodes: P1 and P7, as adding them would expand the size of the rank-2 mesh, leading to more possible proxy nodes to deal with load.

By construction, P4 is a malicious node, and P6 is a legitimate node, but has been installed in the wrong location: human intervention will be required, and P6 must continue to attempt to join until the human intervention has completed.

JCE initiated connections



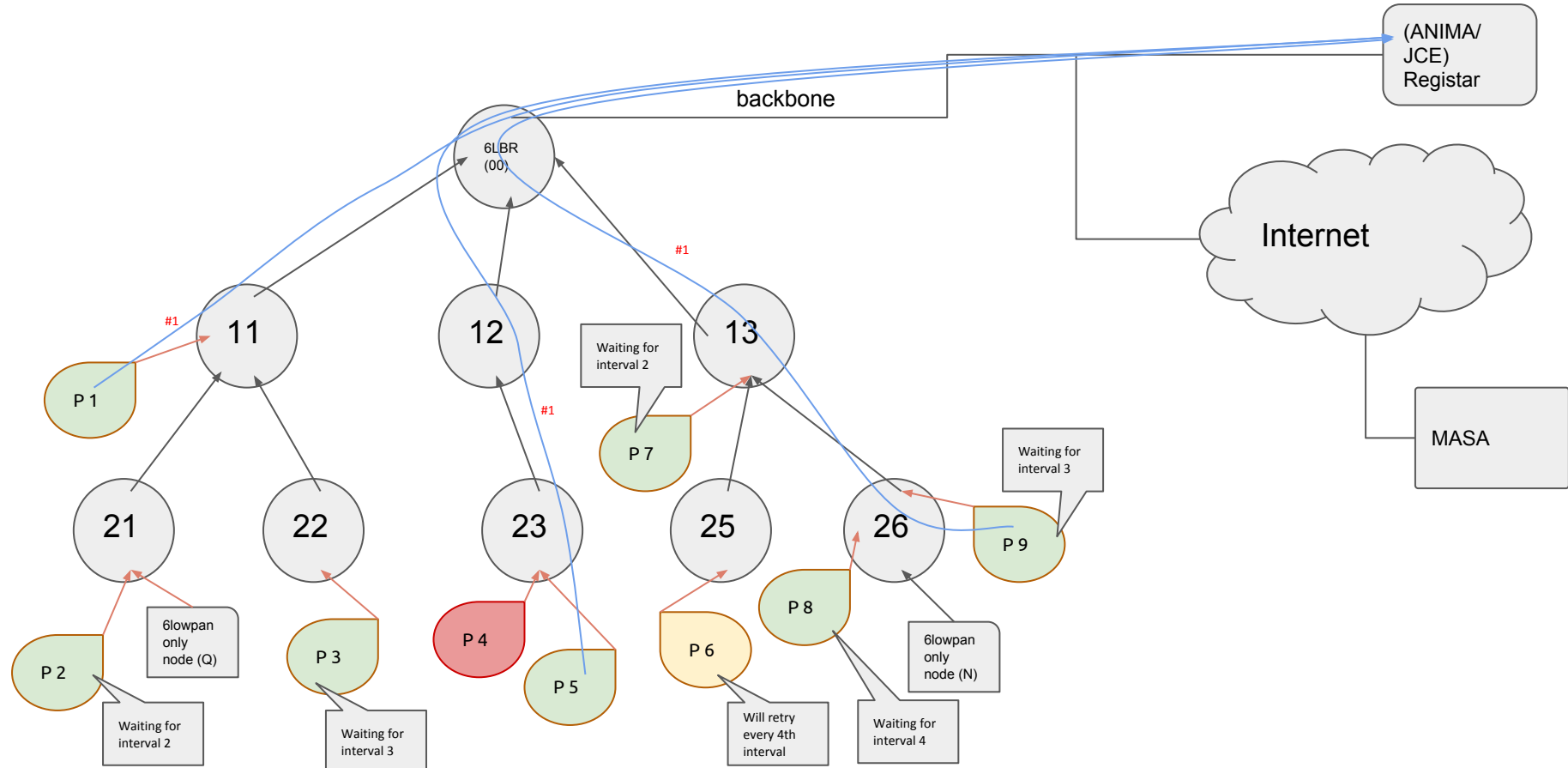
JCE initiated connections - smarter way



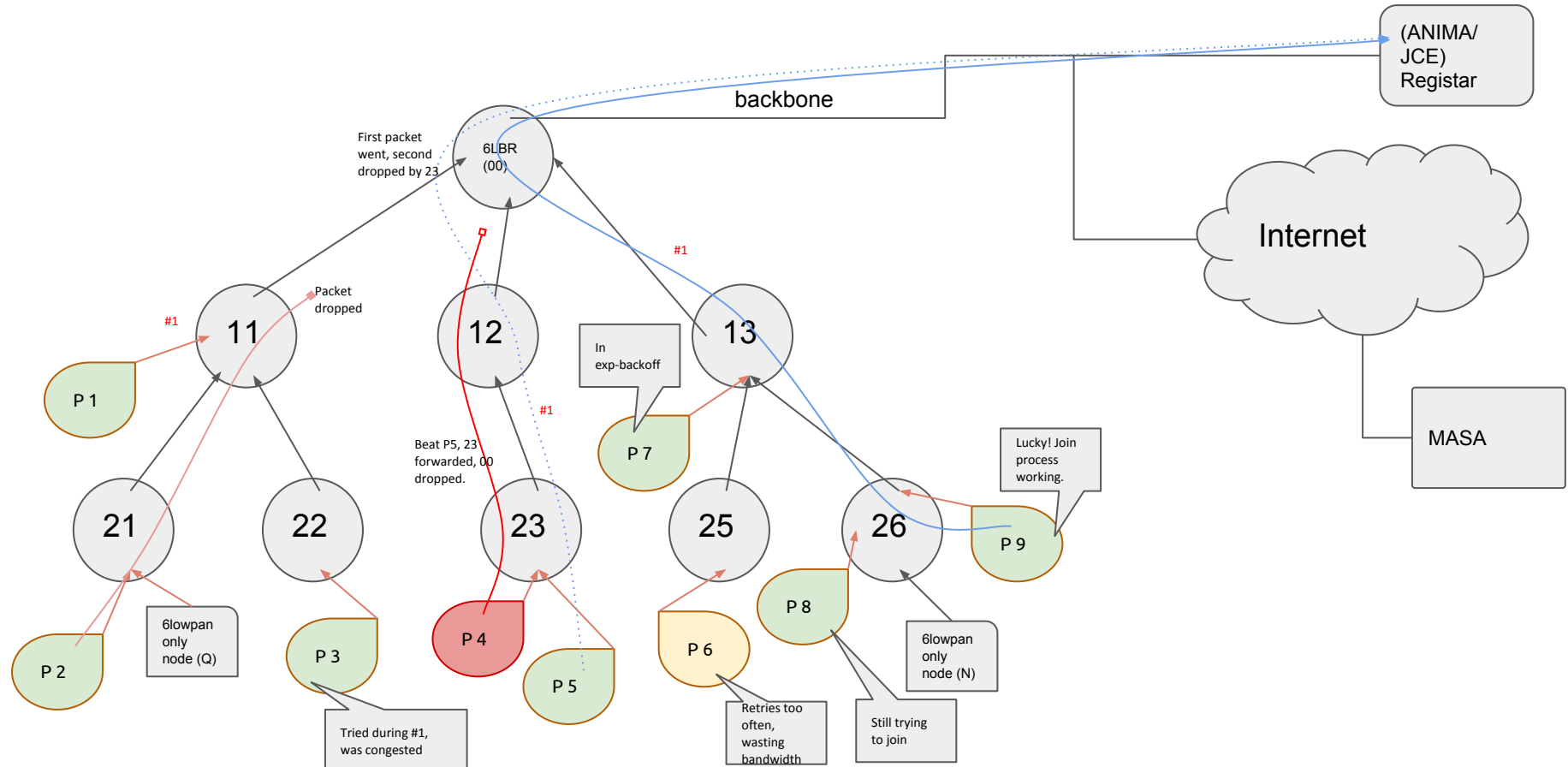
Changes in assumptions

1. Previously, it was desired to signal the JCE of the node identity via ND/EARO and the DAR/DAC process.
2. If the JCE would initiate the connection, then the JCE can control which nodes will join, and in which order, and the JCE can limit itself to the amount of bandwidth available throughout the network.
3. Changes that are driving this exploration:
 - a. Not same architecture as ANIMA
 - b. EARO has gone away.
 - c. How will JCE know if pledge is awake to receive connection?

Pledge initiated connections - ideally! (interval 1)



Pledge initiated connections - worst case!



Desireable properties

1. Give each pledge an interval between retries.
2. Statistically, should result in what appears to be stochastic arrival times. (is this useful)
3. Node 00 would initialize some non-cryptographically secure PRNG/CRC (e.g. Linear Congruent Generator), and then pass out part (partition) of the space to nodes 11, 12, 13. Recurse through MESH.
4. Nodes 11, 21,22,23,24,25,26 and 13 would generate random intervals for P_x attached to them, return them in ND reply.

Not sure how to partition yet!

New help from bandwidth experts

- Is this familiar problem?
- Is this solved problem?
- Is this impossible problem?
- Does this problem have a name?