Network Working Group
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IMP System Change Notification

We are planning to install a new version of the IMP System, version 2514. The new version is scheduled for field installation Thursday, January 13, 1972 between noon and 1 PM EST, and will require the assistance of IMP-site personnel at each site.

There were two principal problems with version 2513, both related to the delay inserted between the time when a Host comes up and the time when its IMP will accept the second packet from the Host. The first was that the delay was lengthened to slightly over 40 seconds, which caused hardware difficulties for some Hosts. The second was that there was an ambiguity that could make the delay run as long as a minute and a quarter. On the first point, the delay has been backed off from 40 seconds to 30 seconds, as it was for IMP systems prior to 2513. On the second point, the ambiguity has been entirely removed. (Note, however, that BBN Report No. 1822, on page 23, specifies that the delay may range from 30 to 90 seconds, and that future versions may require a longer delay.)

In summary, a Host may come alive in one of two ways, corresponding to the two ways in which the Host can go down. If the Host went down voluntarily (by sending a "Host going down" to the IMP), the Host indicates his intention to come alive by sending the IMP something. If the Host went down involuntarily (by dropping his ready line), the Host indicates his intention to come alive by bringing his ready line back up. In either case

the IMP will refuse to accept more than one packet from the Host for 30 seconds after the Host has indicated his intention to come alive. Notice, however, that the Host must be prepared to accept all messages from the Network from the instant that he indicates his intention to come alive.* This particular point seems to have given many Hosts difficulty in running through their standard initialization procedures. Don't forget this simple and universal rule, that when you are telling your IMP that you are alive, you must be prepared to always take every- thing from the Network whether or not the Network is taking any- thing from you.

Version 2514 will also incorporate a few other changes, mainly related to the operation of the NCC. Since the Timeout is, for a change, being made shorter, and the other modifications are minor, there should be no appreciable transient with the coming of the new version.

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*In fact, if the Host does not accept messages from his IMP pimmediately then the Host may see the IMP's Ready line go down for 1/4 second sometime during the 30 second waiting period. This is due to the following set of circumstances:

* The IMP periodically places NOPs on the queue for a dead Host as part of the process of checking the IMP/Host interface.

* If a message remains on a Host's queue for 30 seconds without being taken, the IMP drops its Ready line for 1/4 second in order to clear the interface (see RFC #270).

* The timeout periods for the Host queue and the delay when the Host comes alive are _not_ synchronized.

If the Host is prepared to see the IMP's Ready line dropped during the 30-second delay while coming alive, then no harm will be done if messages from the IMP are not accepted immediately.

BC/jm