1. Identification of the Proposed Change

1.1 Title

Output Time Out Initialized

1.2 MDC Proposer and Sponsor

Proposer
Subcommittee 12 Task Group 9
General Device Issues
Chairman: Gretchen Bradfield

Sponsor
Frederick L. Hiltz
Brigham and Women's Hospital
Partners HealthCare System, Inc.
850 Boylston Street
Chestnut Hill, MA 02467-2402
617-732-9052
fhiltz@bics.bwh.harvard.edu

1.3 Motion

SC12 moves that MDC accept this proposal with Type A status. This document supersedes X11/SC12/TG9/1998–9.

1.4 History

04 Jul 1998	X11/SC12/1998–11	Proposed for MDC Type A.
27 Jun 1998	X11/SC12/TG9/1998–9	Accepted by SC12 as Type A, 10:0:2.
19 Mar 1998	X11/SC12/TG9/1998–8	Edited by TG9 and accepted by SC12 as Type B, 14:0:3.
16 Nov 1997	X11/SC12/TG9/97–13	Original proposal by Frederick L. Hiltz.

1.5 Dependencies

This proposal modifies the M Draft Standard Version 13, X11/TG6/98–1.

Proposals that depend on this proposal: none.

2. Justification of the Proposed Change

2.1 Needs

1 Output Time Out specifies a device parameter that effects an error condition when an output-producing argument of a READ or WRITE command fails to complete execution within a specified time

M code written before this specification became available would stall indefinitely when, for example, a printer ran out of paper. Now, however, it would receive an error if the last process to use the printer left the device parameter set. The output time out device parameter needs an exception to the general rule that device parameter values are retained after closing devices, so that only those programs written to expect a time out error will receive one.

2 The circumstances when OUTSTALLED and OUTTIMEOUT change are not defined adequately for jobs that do not own the device but may examine the ssvns.

2.2 Existing Practice in Area of the Proposed Change

To the sponsor's knowledge, no vendor has implemented Output Time Out, nor any proprietary device parameter that this proposal would affect.

2.3 Justification

This proposal presents an inexpensive solution to an error condition that, occurring infrequently and sporadically, would be difficult to diagnose. It clarifies the changing of OUTSTALLED and OUTTIMEOUT.

3. Description of the Proposed Change

3.1 General Description of the Proposed Change

Output time out shall not apply to a device when the current process has never executed an OUTTIMEOUT device parameter. The timing of changes to the deviceparam and the ssvns is made explicit.

3.2 Annotated Examples of Use

None

3.3 Formalization

Change the M Draft Standard Version 13, X11/TG6/98–1, as marked below.

7.1.3.2 ^$DEVICE

When the mnemonicspace in use for the device defines an output time out as described in 8.3.1, it shall also define the following 2 members of ^$DEVICE:

a) the value of ^$DEVICE (devicexpr , expr V "OUTTIMEOUT") shall equal the value of the most recently executed OUTTIMEOUT deviceparam for the device. It shall equal 0 when no OUTTIMEOUT deviceparam has executed for the device.

b) the value of ^$DEVICE (devicexpr , expr V "OUTSTALLED") shall indicate the output time out status of the device. ~~If the most recently executed output-producing argument of a READ or WRITE command timed out, then this value shall be 1. If that argument did not time out, this value shall be 0.~~ It shall assume the value 0 when the execution of any output-producing argument of a READ or WRITE command begins, and it shall assume the value 1 when that argument times out.

8.2.2 CLOSE

Each designated device is released from ownership. If a device is not owned at the time that it is named in an argument of an executed CLOSE, the command has no effect upon the ownership and the values of the associated parameters of the device. Device parameters in effect at the time of the execution of CLOSE are retained for possible future use in connection with the device to which they apply. (But see 8.3.1, which specifies an exception for output time out.) If the current device is named in an argument of an executed CLOSE, $IO is given a value of the empty string.

8.3.1 Output time out

Output time out shall not apply to a device when

a) no OUTTIMEOUT deviceparam has executed for the device, or

b) the value of numexpr in the most recent OUTTIMEOUT is non-positive.

~~No more than one output time out shall apply to one device at any time. That is, an OUTTIMEOUT deviceparam shall replace any pre-existing OUTTIMEOUT deviceparam.~~

An execution of an OUTTIMEOUT deviceparam shall replace any previous OUTTIMEOUT deviceparam for the device.

The CLOSE command shall

a) set the value of the OUTTIMEOUT deviceparam to 0;

b) set the value of the OUTTIMEOUT member of ^$DEVICE to 0;

c) set the value of the OUTSTALLED member of ^$DEVICE to 0.

Note: this is an exception to the general specification of device parameters in 8.2.2.

Note: output time out applies to the execution of READ or WRITE arguments, not to the delivery of data to a device.

4. Implementation Effects

4.1 Effect on Existing User Practices and Investments

This proposal eliminates a potential source of unexpected errors in existing programs. No other significant effect is known.

4.2 Effect on Existing Vendor Practices and Investments

If incorporated when implementing output time out, this proposal should incur no additional cost. The sponsor expects the cost of adding it later to be small.

4.3 Techniques and Costs for Compliance Verification

Compliance tests need change. Where they now check that the device parameter is preserved between processes, they must check that CLOSE resets OUTTIMEOUT.

4.4 Legal Considerations

None

5. Closely Related Standards Activities

5.1 Other X11 Proposals Under Consideration

Other proposals for which there are dependencies are listed in 1.5.

5.2 Other Related Standards Efforts

None

5.3 Recommendations for Coordinating Liaison

None

6. Associated Documents

None

7. Issues, Pros and Cons, and Discussion

7.1 September 1997 MDC meeting

The sponsor is indebted to Maurice Pepper, who pointed out the need.

7.2 March 1998 MDC meeting

Thanks to David Marcus for the timing of changes to ^$DEVICE.

SC12 accepted X11/SC12/TG9/1998–8 with amendments as Type B by 14:0:3.

	Pro	Con
1	Fixes two omissions in current standard. (3)	

(Number of citations in the vote.)

7.3 June 1998 MDC meeting

SC12 accepted X11/SC12/TG9/1998–9 as Type A by 10:0:2.

	Pro	Con
1	Fixes two omissions in the standard	