

Application Notes Affected: AN2005-005 revision 1.5
AN2005-006 revision 1.5

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1 Overview

An inconsistency has been identified with two of the application notes:

1. Section 2.8 of the latest version of AN2005-005 describes the action to be taken when an inhibit is applied or removed:

When applying or removing an action inhibit for a point the highest action of all of the enabled limits (analogue or counter points) or all of the states (binary points) **and all** of the DNP3 object flags (all point types) must be performed by the Field Device **immediately**, irrespective of the state of the “all points” inhibit, to report the current state of the point. This includes when an action inhibit is applied or removed due to an ‘all points’ action inhibit and when an action inhibit is automatically removed by the Field Device when the time out expires.

Because the action must be performed **immediately** this means that the action is performed without applying persistence. For analogue points this also means that the action is performed without applying hysteresis.

A Field Device may apply action inhibits itself by simulating the receipt of instances of the Action Inhibit Data Set. The Field Device would do this to prevent nuisance data being reported to the Master Station. When a device applies action inhibits itself it must follow the same actions and rules as when processing the receipt of the data set instance:

- It must reflect the current action in the WITS quality flags of the point(s) being inhibited (both in log entries and event data set instances)
- It must reflect the highest permitted action in the bits 10-11 of the Health Check Data Set if the inhibit has been applied to all points
- When applying or removing an action inhibit locally the highest action of all of the enabled limits (analogue or counter points) or all of the states (binary points) **and all** of the DNP3 object flags (all point types) must be performed by the Field Device **immediately**, irrespective of the state of the “all points” inhibit, to report the current state of the point

This text states that the Field Device takes the relevant action “immediately”.

2. Section 2.1.2.4 of the latest version of AN2005-006 describes the action to be taken when a limit is applied or removed and also mentions the applying and removing of inhibits:

In the following situations the **highest** action of **all** of the enabled limits **and all** of the DNP3 object flags must be performed regardless of the highest permitted action (see AN2005-005). This is required to report the current state of the point.

- At device start up (and following a restart).
- When applying or removing an action inhibit.
- When the point is put on scan
- Following a configuration change to the action for any limit or any of the DNP3 object flags.
- When a change in the configuration of the point’s limits causes the point to change state.

The action should be performed **once the point has completed the next or initial (i.e. when the RESTART object flag is cleared) scan of its I/O** without applying hysteresis or persistence.

This text states that the Field Device takes the relevant action “after the next scan”. Similar text is also in sections 2.1.2.5 and 2.1.2.7

The Application Notes need to be consistent. The description of the action inhibit data set seems to be correct. The problem lies in the fact that action inhibit is in the bullet list in AN2005-006. Removing the bullet item(s) about action inhibit from AN2005-006 will give consistency with minimal change to the Application Notes and no change to other documents (Test Specification). The bullet can be removed because it doesn’t give any more information than is already in AN2005-005, so remove the bullet and add a reference to AN2005-005. However, AN2005-005 would benefit with a note about what is expected of the Field Device if the “restart” status is set at the time of applying or removing the inhibit.

NB. In section 2 onwards, text that is shown in **red** represents words to be removed from the application notes and text in **blue** represents words to be inserted into the notes.

2 Changes to the Application Notes

2.1 Changes to AN2005-005, section 2.8

Add a note to the end of the section:

Note:

- If a point's RESTART object flag is set at the time an action inhibit is applied or removed then the "state" and "value" of the point cannot be determined. In this case the action is not to be taken immediately, the action being taken when the RESTART object flag is cleared.

2.2 Changes to AN2005-006, section 2.1.2.4

Make the following change to the description of the "action" element:

In the following situations the **highest** action of **all** of the enabled limits **and all** of the DNP3 object flags must be performed regardless of the highest permitted action (see AN2005-005). This is required to report the current state of the point:

- At device start up (and following a restart).
- **When applying or removing an action inhibit.**
- When the point is put on scan
- Following a configuration change to the action for any limit or any of the DNP3 object flags.
- When a change in the configuration of the point's limits causes the point to change state.

The action should be performed once the point has completed the next or initial (i.e. when the RESTART object flag is cleared) scan of its I/O.

[The action to be taken when applying or removing an action inhibit is detailed in section 2.8 of AN2005-005](#)

2.3 Changes to AN2005-006, section 2.1.2.5

Make the following change to the description of the "action" element:

In the following situations the **highest** action of **all** of the enabled limits **and all** of the DNP3 object flags must be performed regardless of the highest permitted action (see AN2005-005). This is required to report the current state of the point:

- At device start up (and following a restart).
- **When applying or removing an action inhibit.**
- When the point is put on scan
- Following a configuration change to the action for any limit or any of the DNP3 object flags.
- When a change in the configuration of the point's limits causes the point to change state.

The action should be performed once the point has completed the next or initial (i.e. when the RESTART object flag is cleared) scan of its I/O.

[The action to be taken when applying or removing an action inhibit is detailed in section 2.8 of AN2005-005](#)

2.4 Changes to AN2005-006, section 2.1.2.7

Make the following change to the description of the "action" element:

In the following situations the **highest** action of **all** of the states **and all** of the DNP3 object flags must be performed regardless of the highest permitted action (see AN2005-005). This is required to report the current state of the point.

- At device start up (and following a restart).
- **When applying or removing an action inhibit.**
- When the point is put on scan
- Following a configuration change to any of the point's state actions or any of the DNP3 object flag actions.

The action should be performed once the point has completed the next or initial (i.e. when the RESTART object flag is cleared) scan of its I/O without applying persistence.

The action to be taken when applying or removing an action inhibit is detailed in [section 2.8 of AN2005-005](#)