



Network Storms – What are they?

What is a network storm?

A network storm is a situation where a device on a computer network transmits an abnormally large amount of specific data in error which can swamp other devices and cause them to crash.

What can cause a network storm?

There are various causes of network storms including –

- Hardware malfunction
- Incorrectly configured Ethernet hardware
- Human error
- Network design

What can the repercussions of a network storm be?

The potential repercussions of a network storm can be as serious as to lead to a loss of position through issues with sensor and reference system data reception or controller failures due to being overloaded. It has been reported that other issues have occurred such as incorrect sensor voting, partial blackouts, loss of IO, PMS synchronisation issues etc.

What should happen when a network storm occurs?

When a network storm occurs the vessel should not lose heading or position. There are various ways a manufacturer can achieve this through hardware and software. When conducting the test, alarms and protection should be activated to alert the operator and protect the position/heading capability of the vessel.

How to test for a network storm?

Vessel Technology bring their knowledge and DPSS®Net product to fulfil the need to conduct network storm testing. The tests are configured for each vessel and are fully customisable. Tests which are often supplied include -

- High network load – generates data traffic to allow the testing of the capacity of the network.
- Transmission of network storm packets with the number of transmitted packets adjustable by the user. The number is increased to find the point at which the systems network storm protection activates. Following this test relevant packets are retransmitted just below the trigger point for the protection to activate and left for a period of time to ensure no issues are encountered.
- Transmit network storm packets at the maximum possible rate.

These tests are usually carried out on the DP system, Automation and or Navigation systems. The DPSS®Net can be utilised on other networks on board the vessel such as IAS, Crane, Lay Systems etc.

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