# F.14 Reliability

Return to DDS Quality of Service

The RELIABILITY policy indicates the level of reliability requested by a `DataReader` or offered by a `DataWriter`. These levels are ordered, BEST_EFFORT being lower than RELIABLE. A DataWriter offering a level is implicitly offering all levels below.

The setting of this policy has a dependency on the setting of the RESOURCE_LIMITS policy. In case the RELIABILITY `kind` is set to RELIABLE the `write` operation on the DataWriter may block if the modification would cause data to be lost or else cause one of the limits in specified in the RESOURCE_LIMITS to be exceeded. Under these circumstances, the RELIABILITY max_blocking_time configures the maximum duration the `write` operation may block.

If the RELIABILITY `kind` is set to RELIABLE, data-samples originating from a single `DataWriter` cannot be made available to the `DataReader` if there are previous data-samples that have not been received yet due to a communication error. In other words, the service will repair the error and re-transmit data-samples as needed in order to re-construct a correct snapshot of the `DataWriter` history before it is accessible by the `DataReader`.

If the RELIABILITY `kind` is set to BEST_EFFORT, the service will not re-transmit missing data-samples. However for datasamples originating from any one `DataWriter` the service will ensure they are stored in the `DataReader` history in the same order they originated in the `DataWriter`. In other words, the `DataReader` may miss some data-samples but it will never see the value of a data-object change from a newer value to an order value.

The value offered is considered compatible with the value requested if and only if the inequality `offered kind >= requested kind` evaluates to TRUE. For the purposes of this inequality, the values of RELIABILITY `kind` are considered ordered such that `BEST_EFFORT < RELIABLE`.

Source: DDS 1.4 Spec

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