MODULE *Broadcast*

The specification caputers the *DAG* base best effort broadcast to disseminate shares over a peer to peer network.

First pass - We assume no processes failures or messages lost.

EXTENDS *Naturals*, *Sequences*

CONSTANT

Proc Set of processes

VARIABLES

sent, Set of messages sent by all processes
recv, Set of messages received by all processes
acks Set of acknowledgments for messages

$$Message \triangleq [op : \{\text{“send”}\}, from : Proc, seqNo : Nat] \cup [op : \{\text{“recv”}\}, from : Proc, seqNo : Nat]$$

Initially, no messages have been sent, receieved or acknowledged.

$$INIT \triangleq \land sent = \langle\rangle \land recv = [m \in Message \mapsto \{\}] \land acks = [m \in Message \mapsto \{\}]$$

Type invariants

sent is a sequence of messages

recv is a function from *Message* to procs that have receieved the message

acks is a function from *Message* to procs that have implicity acked it

$$TypeInvariant \triangleq \land sent \in Seq(Message) \land recv \in [Message \to Proc] \land acks \in [Message \to Proc]$$

$$NEXT \triangleq \{\}$$

* Modification History
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