Proof: If every , satisfy and , the satisfies

In , it states that

As stated in , if is the sending of a message at , and is receipt of that message at , the . In , if in , the . If every and satisfies and , by logical transitivity, we can conclude that also satisfies

Proof: if and only if

We know by the definition of for two events and if for all , , and there exists such that .

means that causally precedes . This can only happen if the clock of is smaller than the clock of . An event in cannot causally precede an event in if its clock value is after that of the event in .