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# Information lifecycles

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# Information Lifecycle Management

- Volatile information (ex. Measure Data)
- Semi-static information (ex. Measurement site data)
- Full dynamic, i.e. stateful information (ex. Situation and Situation Records)

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# Concepts

- Operating Mode
  - On Occurrence
  - Periodic
- Update Method
  - Partial Updates
  - Full Update
- Data Request

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# Scenario

- T1 - Situation 1 & 2 are created
- T2 – Version 2 of Situation 1 created
- T3 – No changes
- T4 – V3 of S1 created & V2 of S2 created
- T5 – No changes
- T6 – S1 Ends
- T7 – V3 of S2 created
- T8 – No changes
- T9 – S2 Ends
- T10 - No changes

| Time | State |
|---|---|
| T1 | S1.V1<br>S2.V1 |
| T2 | S1.V2<br>S2.V1 |
| T3 | S1.V2<br>S2.V1 |
| T4 | S1.V3<br>S2.V2 |
| T5 | S1.V3<br>S2.V2 |
| T6 | S2.V2 |
| T7 | S2.V3 |
| T8 | S2.V3 |
| T9 | - |
| T10 | - |

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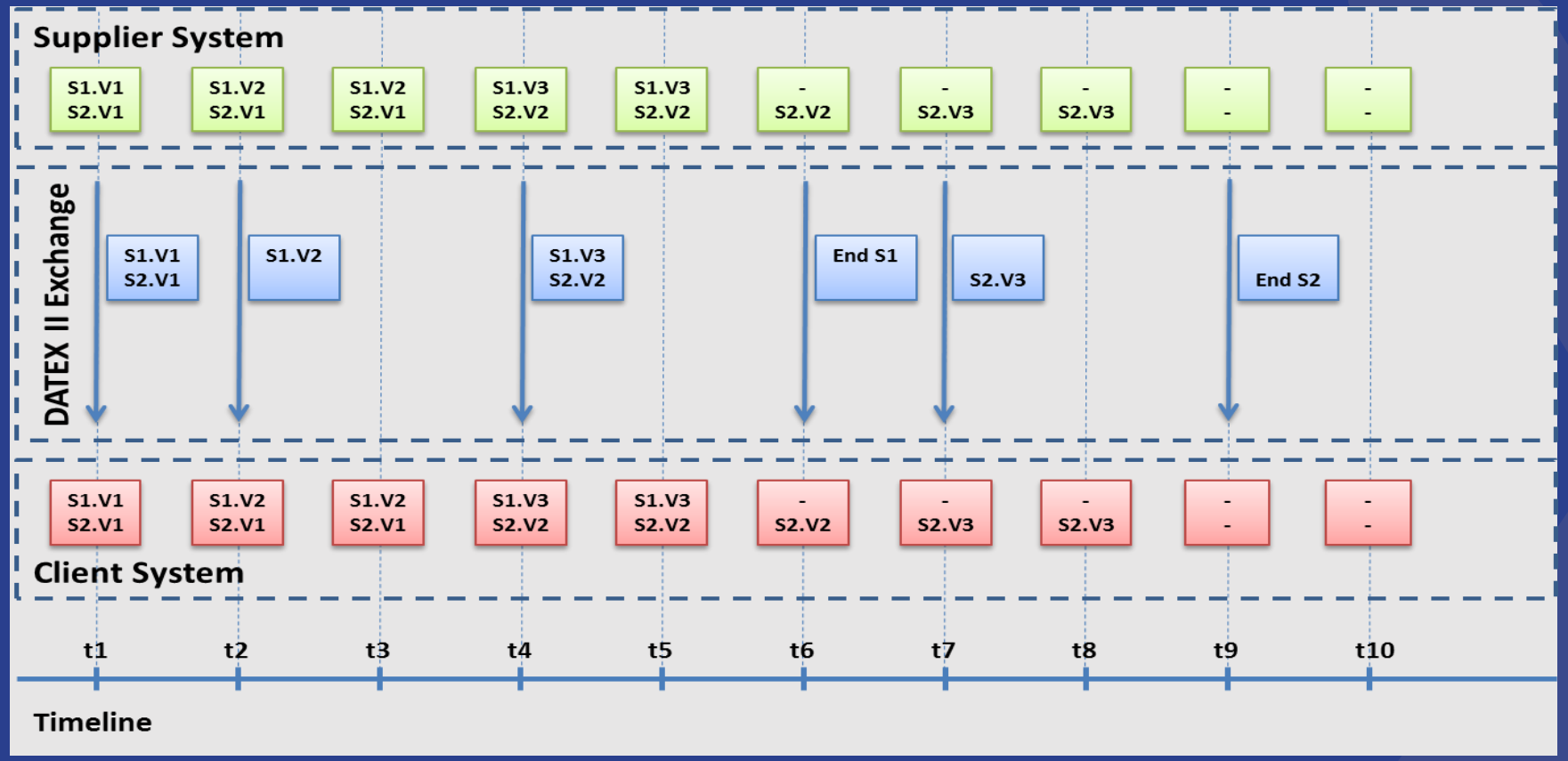
# The Goal (In a perfect world)

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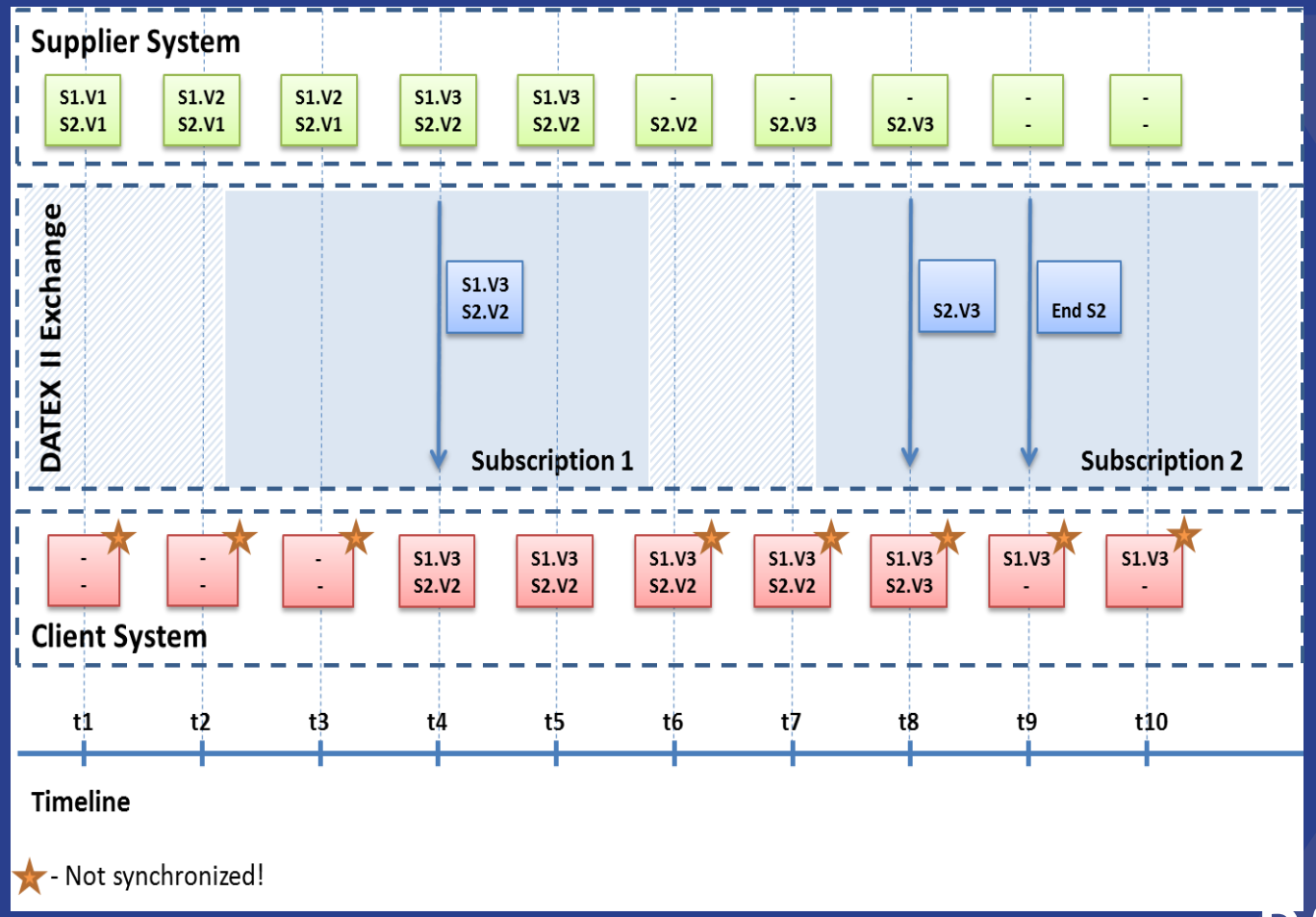
# S1 - “On Occurrence” with “Partial Updates”

As soon as the first message is received, the client can be fully synchronized with the supplier.

All logic is on the supplier side




Only the changed part of the information is sent, even if there is more information that was never sent to the client before.

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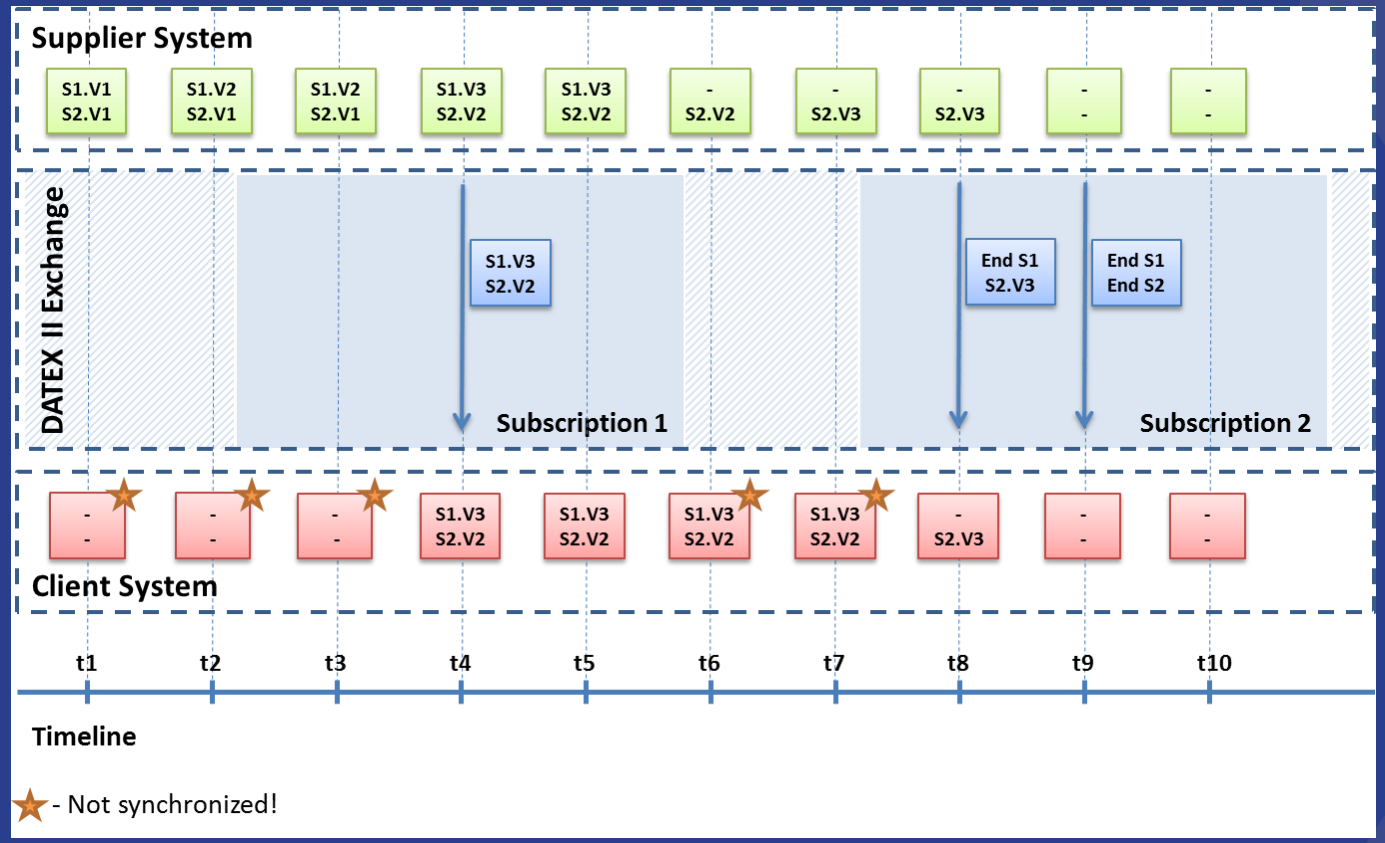
# S2 - “On Occurrence” with “Full Updates”

As soon as the first message is received, the client can be fully synchronized with the supplier.

All logic is on the supplier side




High bandwidth consumption since messages contain the full supplier’s state.

The same information may be sent several times.

After creating a subscription the client might have to wait for a long time before receive messages from the supplier (depends on the occurrence of the next state change).

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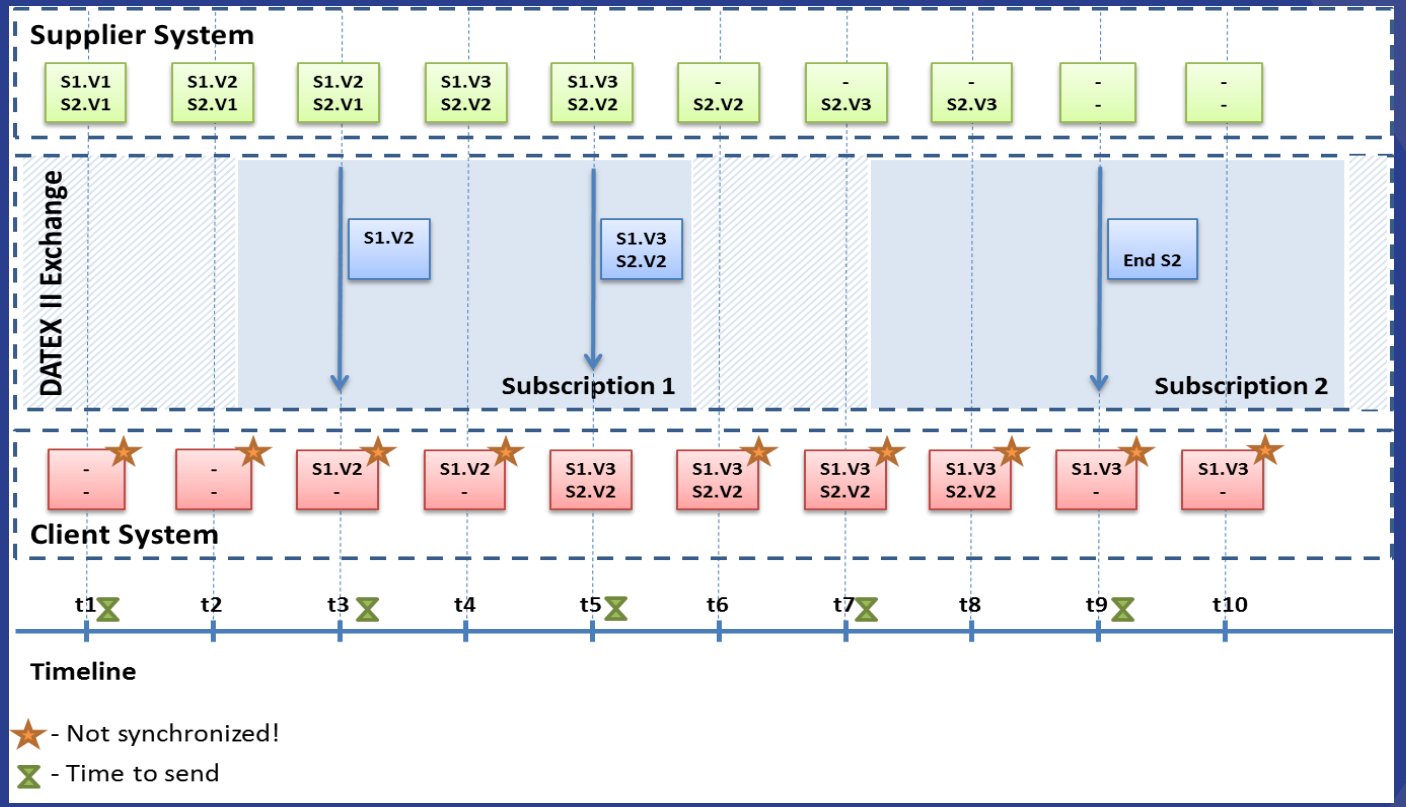
# S3 - “Periodic” with “Partial Updates”

**Low bandwidth consumption**

**No duplicated information is sent**

**All logic is on the supplier side**




**Only the changed part of the information is sent, even if there is more information that was never sent to the client before.**

**There’s a delay between the time of the occurrence of an event on the supplier’s system and the time the message is sent to the client.**

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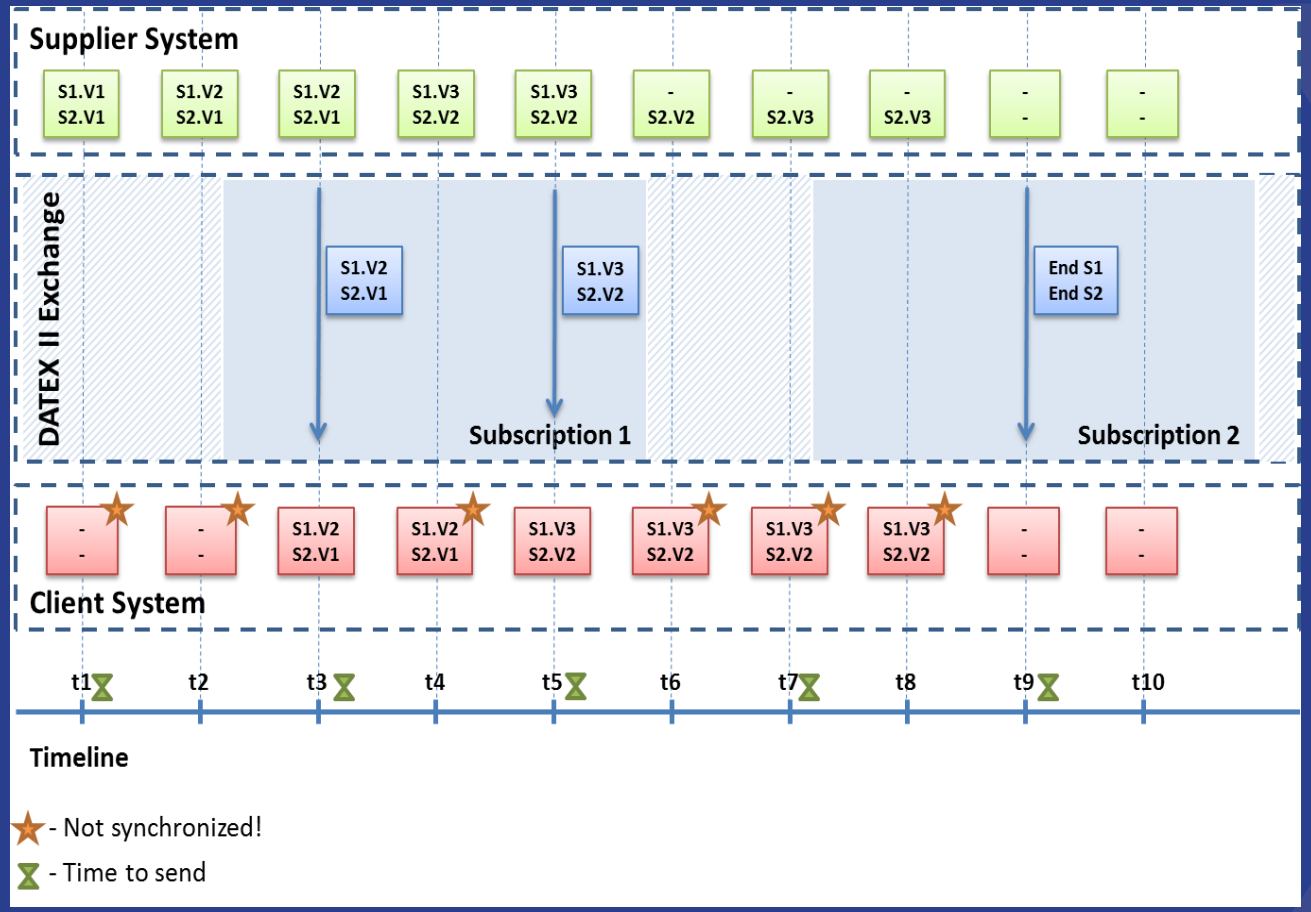
# S4 - “Periodic” with “Full Updates”

As soon as the first message is received, the client can be fully synchronized with the supplier.

There’s no need to wait for a state change in order to receive the first update.

All logic is on the supplier side.




High bandwidth consumption since messages contain the full supplier’s state.

The same information may be sent several times.

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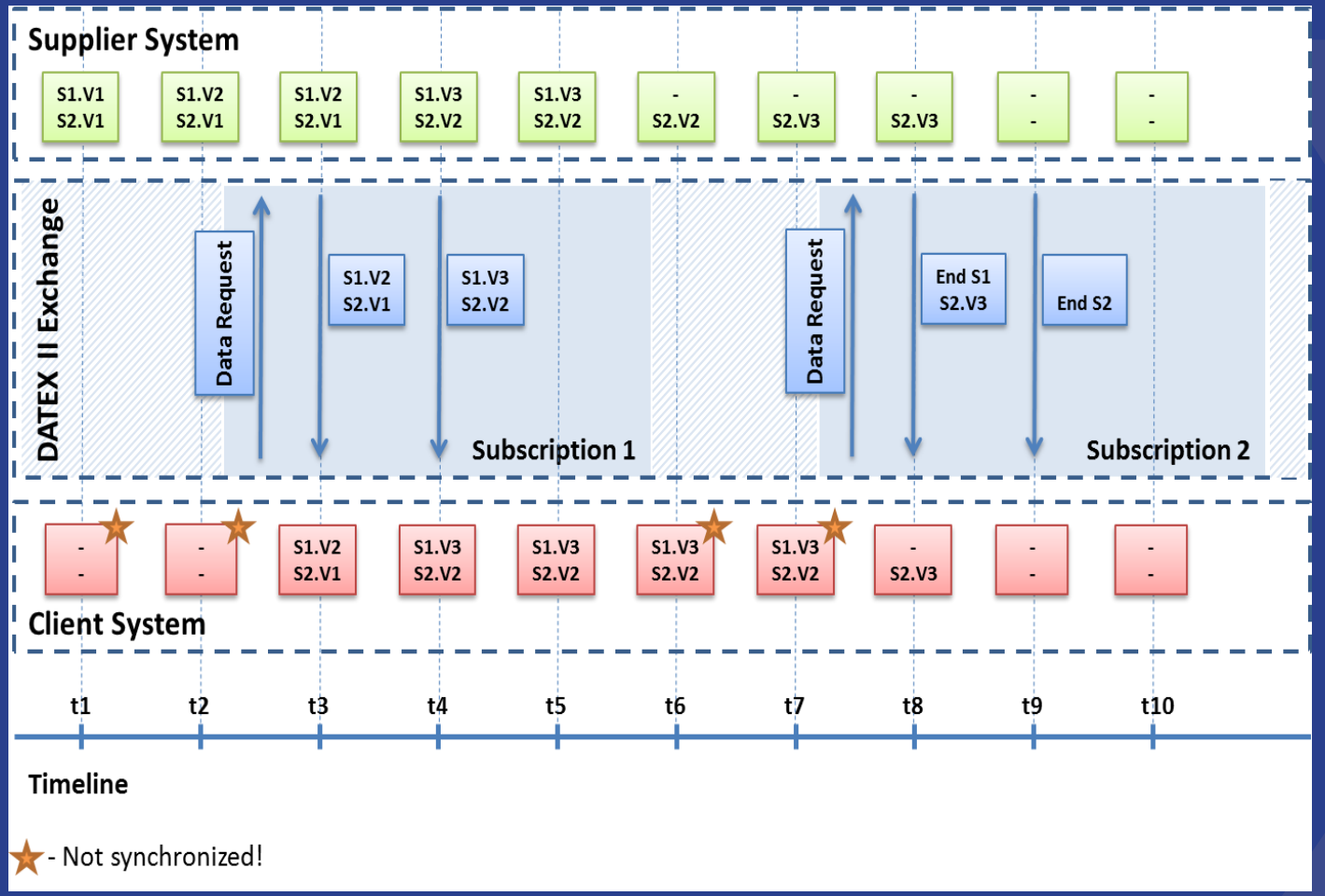
# S5 - “On Occurrence” with “Partial Updates” and Synchronization

Low bandwidth consumption, except for the synchronization phase.

No duplicated information is sent during the same subscription.




The client may not receive all state changes.

The synchronization logic is on the client side (he decides whether to ask for a synchronization or not).

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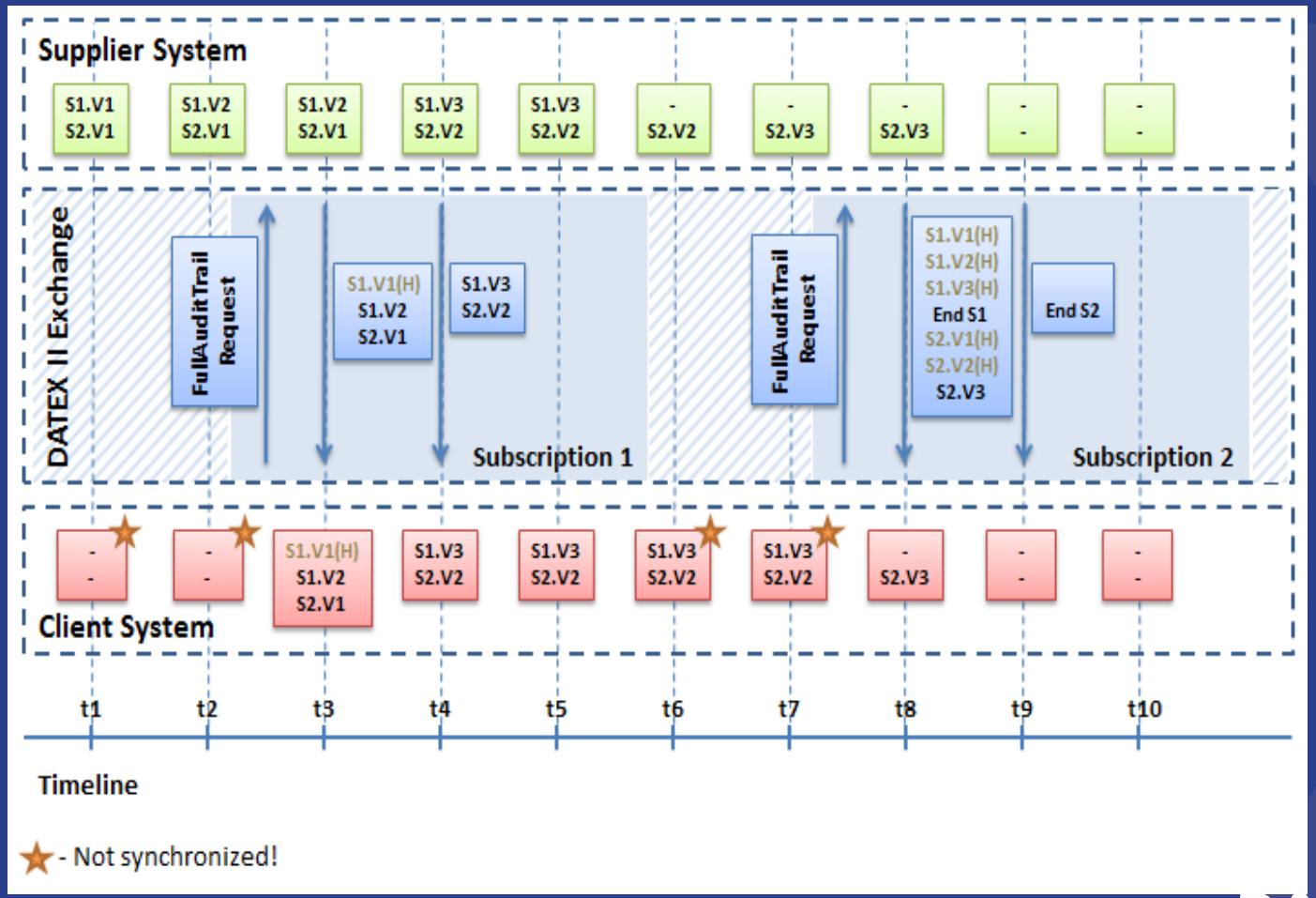
# S6 - “On Occurrence” w “Partial Updates” & Synch & Full audit trail

Low bandwidth consumption, except for the synchronization phase.

All state changes are received by client.

No duplicated information is sent during the same subscription.




High bandwidth consumption during the synchronization phase.

The synchronization logic is on the client side (he decides whether to ask for a synchronization or not).

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# Trade-offs

- Understand the information needs
- Focus on the combination of features (OM; UM; DR)

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# Thanks

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