

Group 04

Task 1) Streaming Semantics

1. “Best effort” Semantic: Each input message either delivered and processed once, multiple times, or not-at all to the receiver.
2. “At least-once” Semantic: Each input message either delivered and processed once or multiple times.
3. “Exactly-once”: Each input message either delivered and processed exactly once.

“At least-once” is harder than “Best effort”, because the system need to store the message redundantly to ensure that the massage is delivered and processed even in case of component failures.

“Exactly-once” is even harder than “At least-once”, because the system need to not only store the message redundantly, but also detect and handle repeated messages, in case of, for example, processing time longer than timeout.