

Task 3:

Choose a method of communication, that is available in ROS (Robot Operating System), best suited for broadcasting some sensor data, and one that is best for sharing low latency mathematical function capabilities. Explain your position.

Answer:

1. As far as broadcasting sensor data is concerned, the best option in ROS is communication via a Topic. Per the official documentation*, Topics should be used for continuous data streams, can be subscribed at any time and support "many to many" type connections. Thus, I believe it is a perfectly suitable choice for "broadcasting data".
2. With regards to sharing low latency mathematical function capabilities, I think that the main term here is "low latency". As I understand, such a function is for a task that is required to be performed as soon as possible and will not be used for a longer running process. If so, per the same documentation, Service is what I would choose, as it "should be used for remote procedure calls that terminate quickly". However, if my initial understanding is incorrect, I might also consider Actions. Thus, to confidently answer that part of the question I would need additional explanation regarding mentioned mathematical function capabilities.

*<https://wiki.ros.org/ROS/Patterns/Communication>