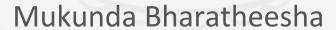
1.4

ROS Services – "request – response" communication



ROS Services – the basic idea

- ROS nodes communicating with Topics
 - "Many to many one-way communication" ROS Wiki.
 - No acknowledgement.
 - Useful for monitoring.
- ROS Services
 - Request Response communication.
 - Two message types a request, and a response.
- "Event-based" execution for ROS applications.

ROS Services – on the filesystem, utility cmds

- ROS services are also defined in the ROS messages package
 - hrwros_msgs/srv folder.

list all available ROS services

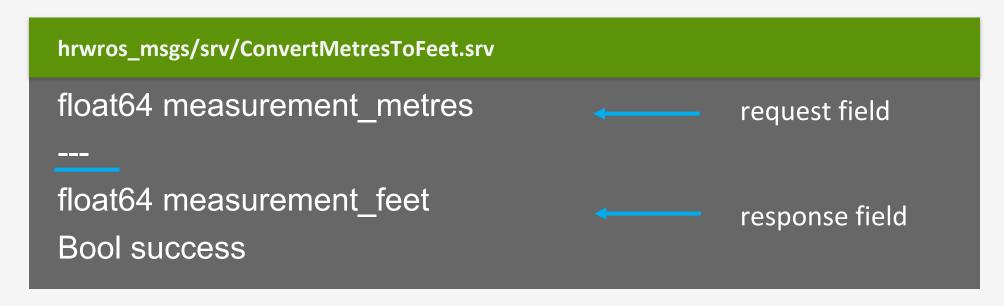
\$ rosservice list

call a ROS service

\$ rosservice call <service_name> <arguments_req>

ROS Services – an example service type

- Requirement: convert measurement in SI units to Imperial Units
 - request message measurement in SI units (m).
 - response message measurement in Imperial Units (ft).



• A service request is processed in a **service callback**.

ROS Services – code nomenclature

- A ROS Node: **service server** "advertises" a service
 - makes the service available for other ROS nodes.

- A ROS Node: service client "calls" a service
 - sends a request message once a service is available.

ROS services – a few properties

Attention!

- ROS services block the program flow.
- Useful for designing sequential behaviors.
- Desirable to have quickly executing computations in service callback.
- No going back after a service call!