First, I would generate raw IMU data, by changing the code of the control of the mobile manipulator into an automatic one which takes different value changing with time.  
Then through rostopic echo command, I would generate raw IMU data.

But as this data is not aligned with a fixed frame of axis, this would need to be corrected, and the method I would use is to correct the gravity vector so its only pointing towards negative Z axis using the gravity vector sensor code in <https://www.allaboutcircuits.com/technical-articles/how-to-interpret-IMU-sensor-data-dead-reckoning-rotation-matrix-creation/> and

This would be done through a publisher-subscriber system, where the raw data would be published and the gravity vector code would subsribe to it adjust it and give correct IMU data.