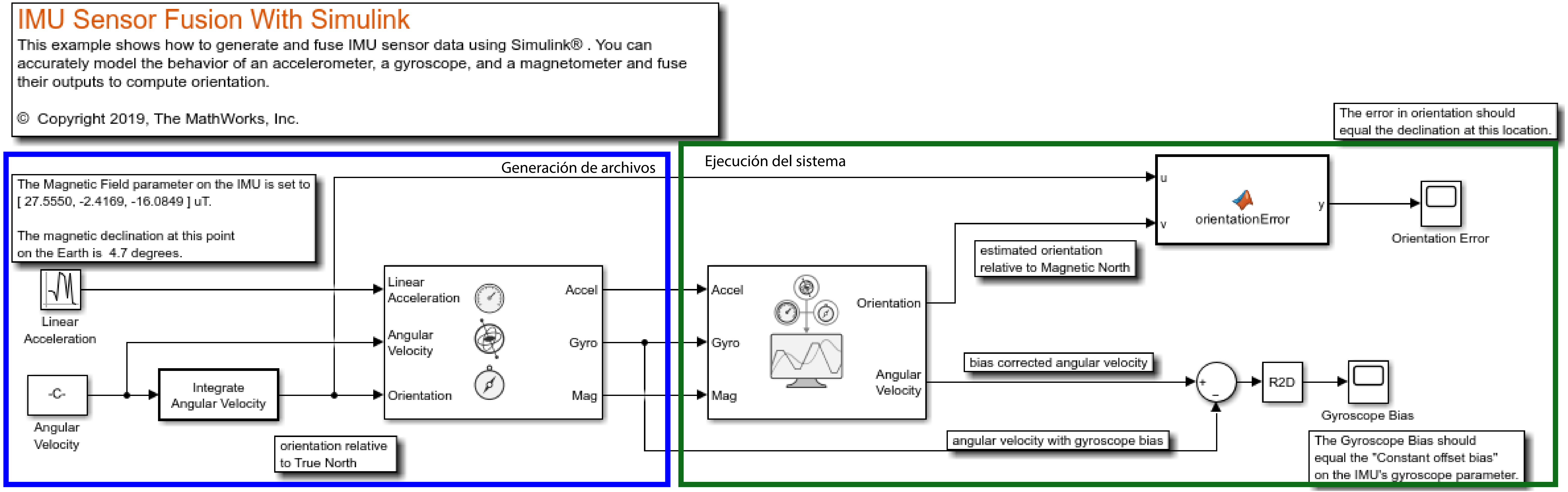

IMU Sensor Fusion With Simulink

This example shows how to generate and fuse IMU sensor data using Simulink® . You can accurately model the behavior of an accelerometer, a gyroscope, and a magnetometer and fuse their outputs to compute orientation.

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The error in orientation should equal the declination at this location.

Generación de archivos

The Magnetic Field parameter on the IMU is set to [27.5550, -2.4169, -16.0849] uT.

The magnetic declination at this point on the Earth is 4.7 degrees.

orientation relative to True North

Ejecución del sistema

estimated orientation relative to Magnetic North

bias corrected angular velocity

angular velocity with gyroscope bias

The Gyroscope Bias should equal the "Constant offset bias" on the IMU's gyroscope parameter.

Linear Acceleration
-C-
Angular Velocity
Integrate Angular Velocity
Linear Acceleration
Angular Velocity
Orientation
Accel
Gyro
Mag
Accel
Gyro
Mag
Orientation
Angular Velocity
u
v
orientationError
y
Orientation Error
+
-
R2D
Gyroscope Bias