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Artillery

Fire Control System

What is a Fire Control System?

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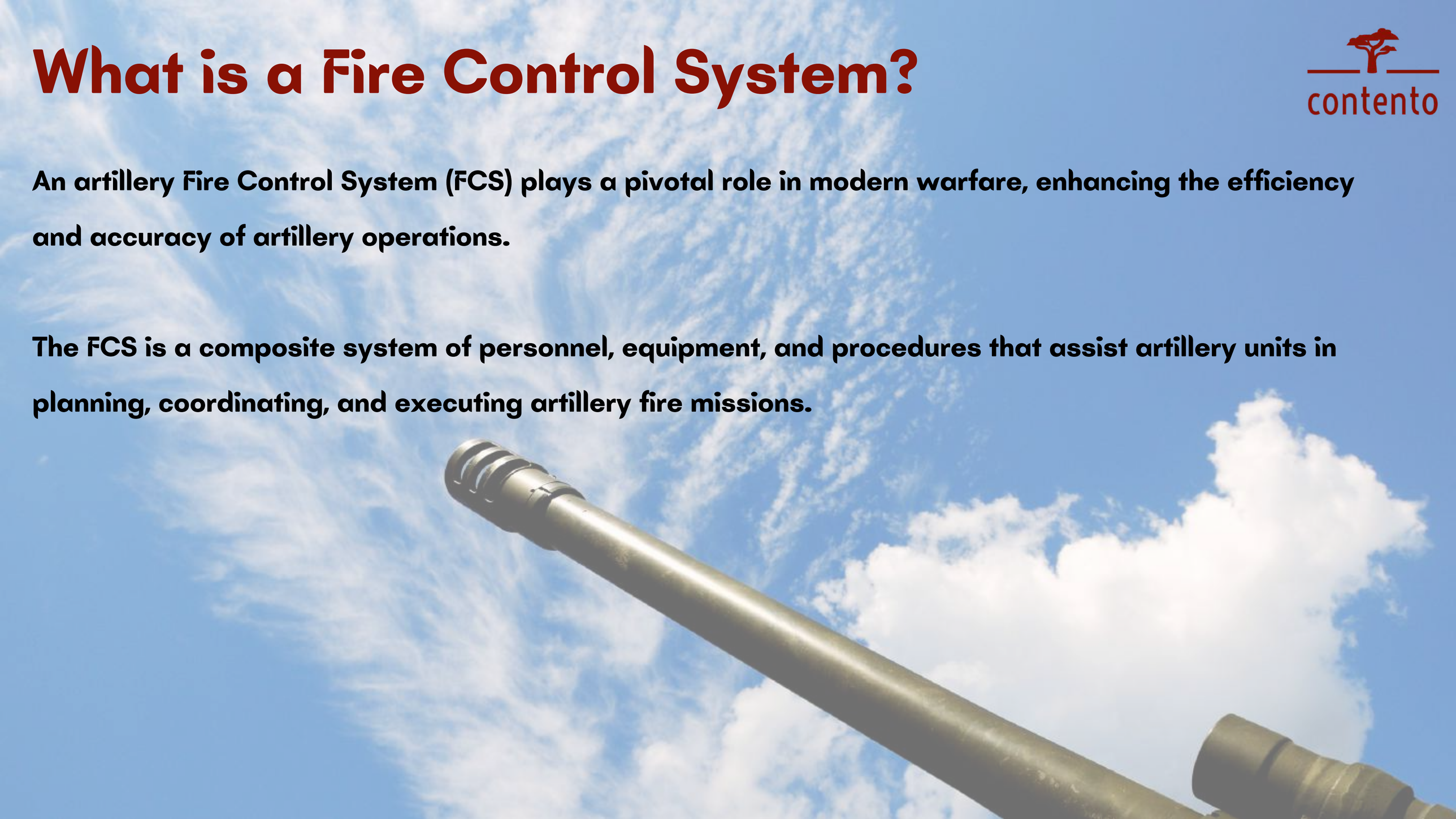
An artillery Fire Control System (FCS) plays a pivotal role in modern warfare, enhancing the efficiency and accuracy of artillery operations.

The FCS is a composite system of personnel, equipment, and procedures that assist artillery units in planning, coordinating, and executing artillery fire missions.



Without a Fire Control System...

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Targeting Difficulties

Manual determination and tracking of targets.

Fire Miscalculations

Increased chance of errors due to manual calculations.

Lower Firing Speed

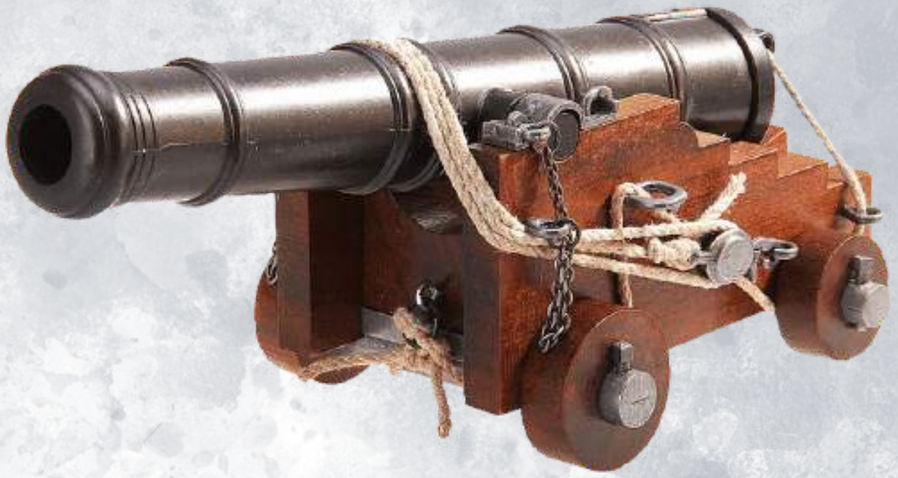
Manual firing processes.

Decreased Efficiency

Manual corrections and optimizations needed.

Higher Personnel Requirement

More personnel needed due to lack of automation.



With a Fire Control System...

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Improved Targeting

Automated and more accurate targeting.

Automated Fire Calculations

Reduced errors and increased accuracy.

Increased Firing Speed

Faster engagement with targets.

Enhanced Efficiency

Improved overall operational efficiency.

Reduced Personnel Requirement

Less personnel needed due to automation.

Key Missions

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Target Acquisition

The FCS gathers data from various sources, such as forward observers unmanned aerial vehicles (UAVs), satellites, radars, or other intelligence sources to locate and track the target.

Fire Calculations

The FCS computes fire parameters such as elevation, azimuth, and firing speed considering multiple variables, including the location of the target, the position of the gun, atmospheric conditions (wind speed and direction, temperature, etc.), type of ammunition, and other factors.

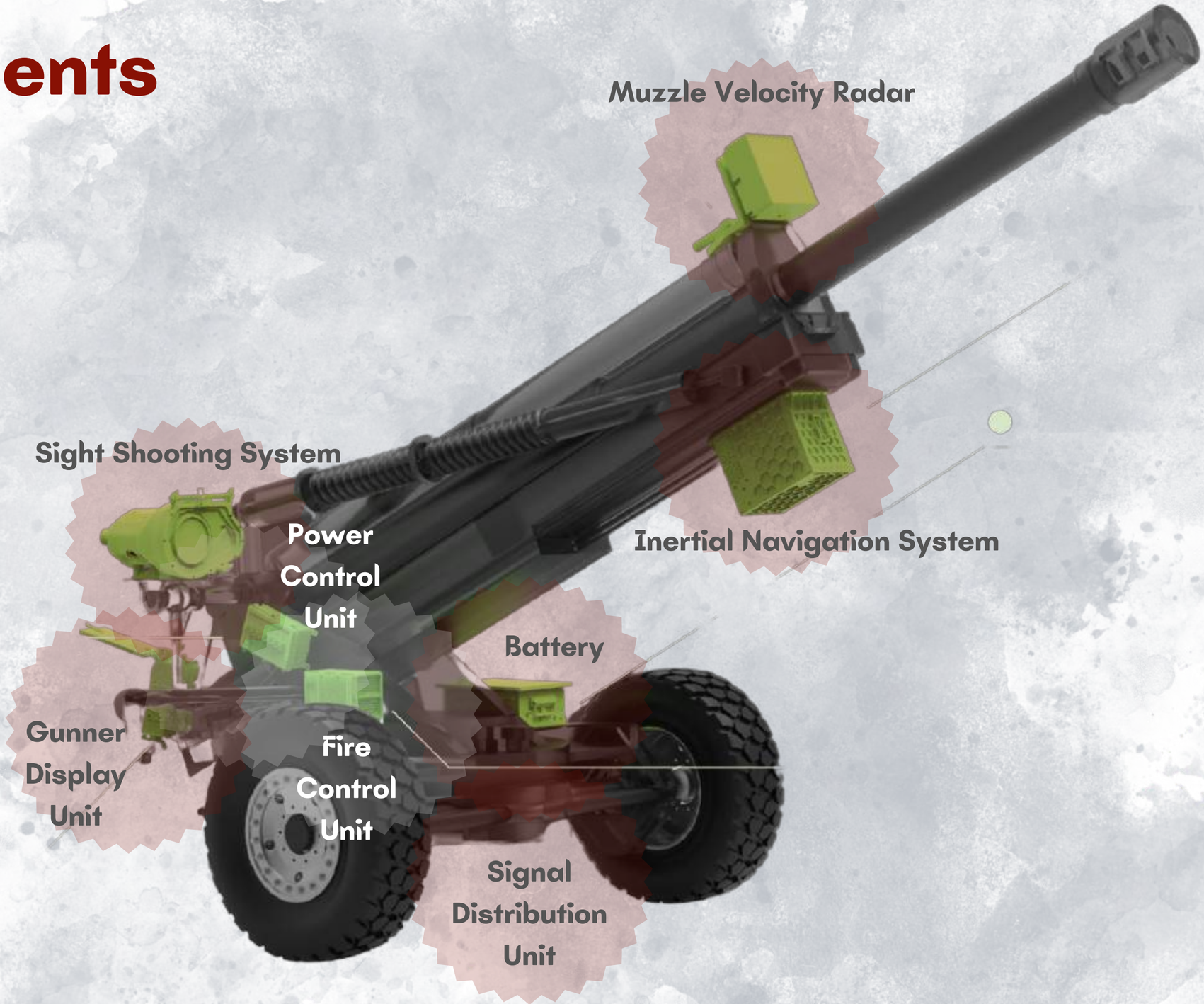
Weapon Settings

Once calculations are complete, the FCS provides instructions to the operator regarding the necessary elevation and azimuth settings for the gun barrel.

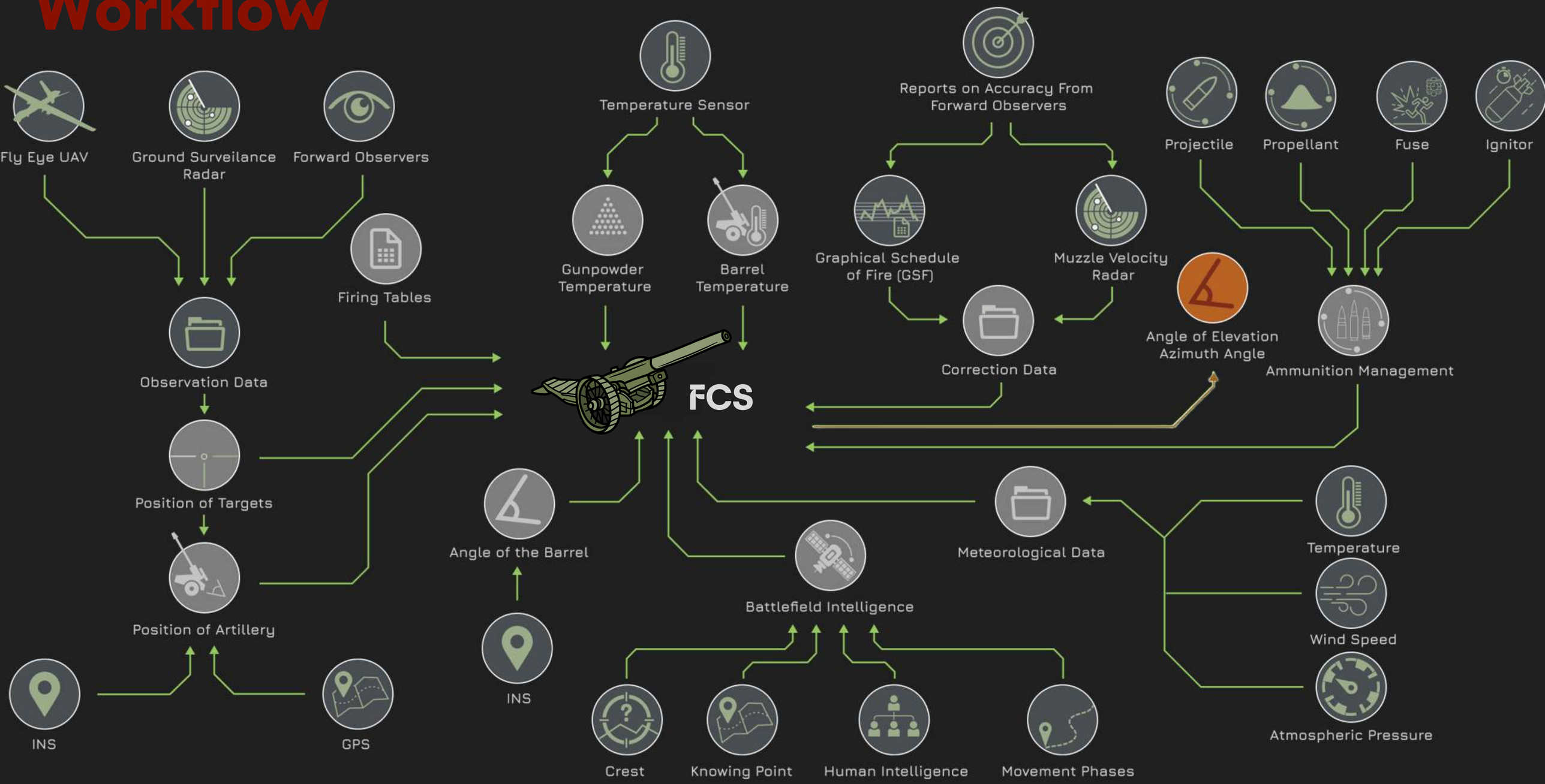
Tracking Firing Results and Correcting Settings

The FCS monitors post-firing target and corrects firing settings when necessary.

Components


Muzzle Velocity Radar
Sight Shooting System
Power Control Unit
Inertial Navigation System
Battery
Gunner Display Unit
Fire Control Unit
Signal Distribution Unit

Workflow


Fly Eye UAV
Ground Surveilance Radar
Forward Observers
Firing Tables
Observation Data
Position of Targets
Position of Artillery
INS
GPS
Temperature Sensor
Gunpowder Temperature
Barrel Temperature
FCS
Angle of the Barrel
INS
Reports on Accuracy From Forward Observers
Graphical Schedule of Fire (GSF)
Muzzle Velocity Radar
Correction Data
Projectile
Propellant
Fuse
Ignitor
Angle of Elevation
Azimuth Angle
Ammunition Management
Meteorological Data
Battlefield Intelligence
Crest
Knowing Point
Human Intelligence
Movement Phases
Temperature
Wind Speed
Atmospheric Pressure

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