

# Excalibur (XM982)

Provides improved fire support to the maneuver force with precision-guided, extended range, more lethal but collateral damage-reducing artillery projectiles.



## DESCRIPTION AND SPECIFICATIONS

The Excalibur XM982 is a family of 155mm, Global Positioning System (GPS)-guided, fire-and-forget projectiles under development as the Army's next-generation cannon artillery precision munition. The program uses a spiral development approach and will field three unique variants. The initial block comprises a unitary high-explosive warhead that is capable of penetrating urban structures, but is also effective against point targets, personnel targets, such as dismounted infantry and weapon crews, and light materiel targets, including air defense rockets, radars, and wheeled vehicles. The unitary Excalibur has three fuze options: height-of-burst, point-detonating, and delay/penetration. Excalibur weighs 106 pounds and has a maximum range of 35 kilometers (threshold) 40 kilometers (objective).

Future block improvements will include smart and discriminating munitions. Smart munitions (Block II) are expected to search, detect, acquire, and engage fleeting and short-dwell targets common to open-terrain battlefields. Discriminating munitions (Block III) are expected to add the capability to selectively identify and engage individual vehicular targets by distinguishing specific target characteristics. Each block will employ a base bleed unit to provide an extended range capability.

Excalibur uses a jam-resistant internal GPS receiver to update the inertial navigation system, providing precision guidance and dramatically improving accuracy regardless of range. The target, platform location, and GPS-specific data are inductively entered into the projectile's mission computer through an enhanced portable inductive artillery fuze setter or automated system on the Future Combat System (FCS)-Non-Line-of-Sight Cannon (NLOS-C). Excalibur is effective in all weather and terrain. The current program develops Excalibur for fielding to the digitized Joint

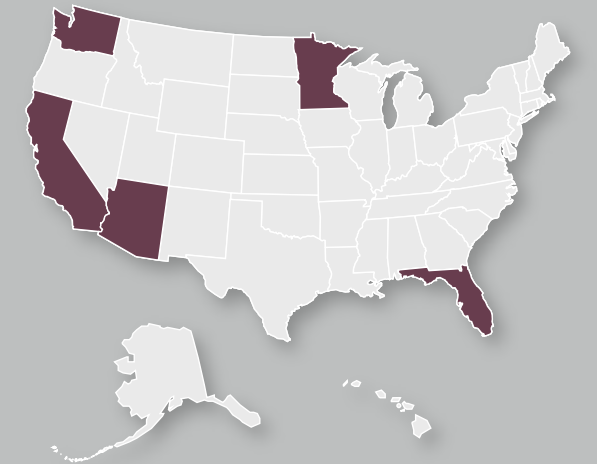
Lightweight 155mm Howitzer, the 155mm M109A6 self-propelled howitzer (Paladin), and the Future Force indirect fire weapon (FCS NLOS-C).

## PROGRAM STATUS

- **4QFY04** Conducted functional guidance section testing. Guidance Navigation Control and Inertial Measurement Units (IMU) successes: GPS receiver acquired and tracked satellites; airframe demonstrated stable flight and structural integrity; canards deployed and locked when commanded; IMU operated as expected throughout flight; computer calculated navigation solution. Successfully demonstrated warhead lethality in arena and penetration testing.

## PROJECTED ACTIVITIES

- **2QFY05** Critical design review
- **4QFY05** Spiral 1A-1 early fielding Milestone C
- **1QFY06** End-to-end demonstration



## CONTRACTORS

**Systems Integration:** Raytheon (Tucson, AZ)  
**Systems Engineering:** Bofors Defence (UDLP) (Karlskoga, Sweden) teamed with Raytheon Corporation (Tucson, AZ)

**Warhead:** General Dynamics Ordnance and Tactical Systems (St. Petersburg, FL)

**Control Actuator:** General Dynamics Versatron (Healdsburg, CA)

**Soft Recovery System:** General Dynamics Ordnance and Tactical Systems (Redmond, WA)

**Inertial Measurement Unit:** Honeywell (Minneapolis, MN)

## INVESTMENT COMPONENT

Modernization

## ACQUISITION PHASE

- System Development and Demonstration