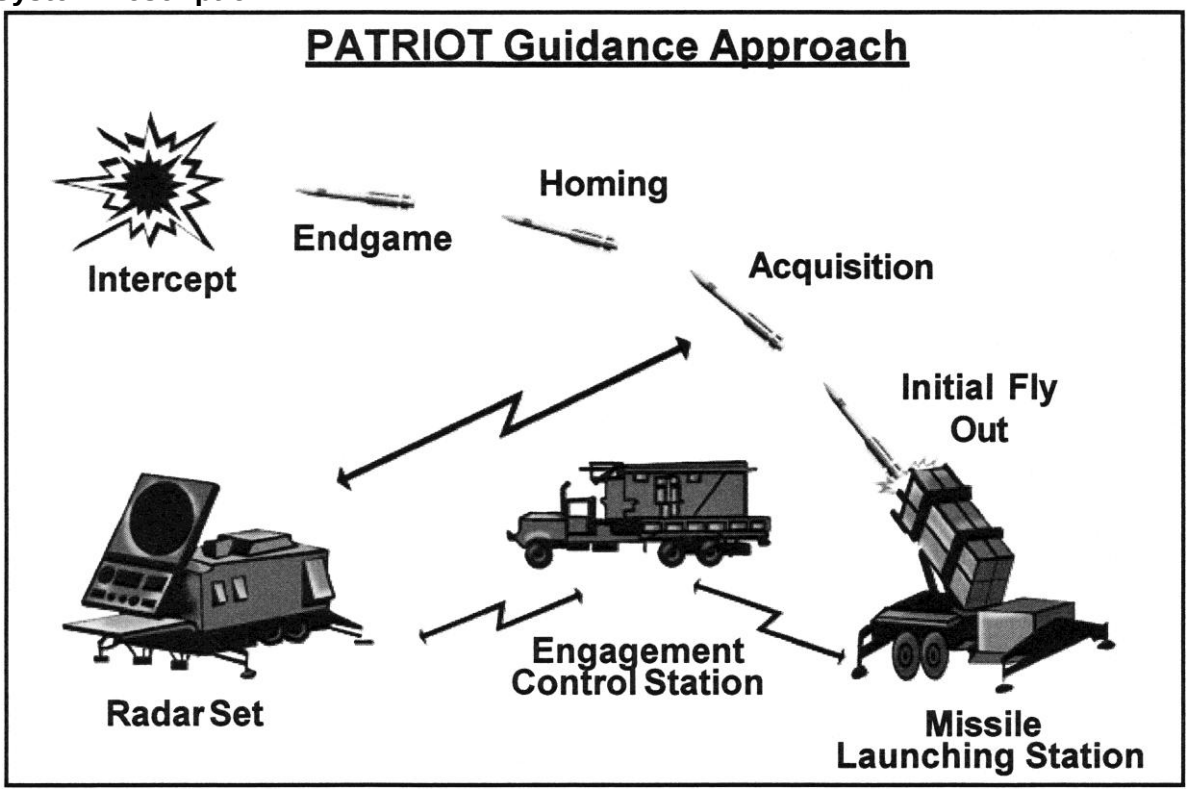
PATRIOT FACT SHEET

Overview
The PATRIOT is a ground-to-air guided air and missile defence system currently in use with several NATO allies including the United States, Spain, Greece, the Netherlands, and Germany.

History
The first PATRIOT air defence systems were deployed by U.S. Forces in 1985. Initially, PATRIOT focused on air defence rather than missile defence, but an evolving security situation and an increased ballistic missile threat led to a refocus towards missile defence. The system was used during the first Gulf War to defend several nations against Scud missiles. Over the years the system has been upgraded numerous times and is still regarded as one of the most advanced air and ballistic missile defence systems in use. Today's missiles use kinetic energy rather than explosive warheads to destroy ballistic missile targets. Together with enhanced radars and control stations, modern PATRIOT systems have an increased range and are more reliable and effective in countering hostile threats.

Role
The role of the PATRIOT is to defend against airborne threats as a part of an integrated theatre air and missile defence system. This includes defending allied populations, infrastructure, and defences from short and medium range ballistic missiles, cruise missiles, and other threats such as hostile military aircraft. Notable characteristics of the PATRIOT system include a short response time, the ability to engage multiple targets simultaneously, significant ground mobility, and the ability to resist electronic jamming.

System Description



PATRIOT systems have four basic components: a radar set, an engagement control station, a launching station, and the interceptors (missiles) themselves.

Radar Set

The radar set provides warning and tracking of incoming threats. The phased array radar helps guide interceptors to their intended targets and is resistant to jamming.

Engagement Control Station

The engagement control station calculates trajectories for interceptors, controls the launching sequence, and links all PATRIOT units together in a defence network. As such, it communicates with the launching stations, other Patriot batteries, and the higher command headquarters. It is the only manned station in a Patriot fire unit.

Launch Stations

The launch stations transport and protect the interceptors (missiles) and provide the platform for the physical launch of the missile.

Interceptors (PAC-3)

PAC-3 Interceptors have been specifically designed for defence against ballistic missiles. They seek to destroy incoming missiles by impacting them directly with kinetic energy.

Target Engagement

A target engagement can be carried out in manual, semi-automatic or automatic mode. When the decision has been made to engage a target, the engagement control station selects the launch station or stations and pre-launch data is transmitted to the selected missile. After launch and initial fly out, the Patriot missile is acquired by the radar. The command uplink and the missile tracking downlink allow the missile's flight to be monitored and provide missile guidance commands (homing) from the weapon control computer. As the missile approaches the target, the guidance system is activated and the missile is steered into the target.

Specifications

Variant: PAC-3 (Configuration 3)
Missile Range: 25 Km against ballistic missiles
Missiles per launching station: 16 (Germany – 8)
Radar Range: 100+ Km
Speed: 5,000 Km/h
Flight Ceiling: 20 Km
Missile Length: 5.2 m
Diameter: 25 cm
Weight: 320 Kg

Netherlands System

The Royal Netherlands Air Force first acquired PATRIOT systems in 1987 and current systems have been upgraded to the most modern configuration (PAC-3). During the first Gulf War in 1991, Dutch PATRIOTS were deployed to defend several countries from the Scud Missile Threat. In 2003, Dutch PATRIOTS were deployed under a NATO framework (OPERATION DISPLAY DETERRENCE) to protect the Turkish cities of Diyarbakir and Batman from attack.

German System
German Forces first acquired PATRIOT in 1989 and current systems have been upgraded to the most modern configuration (PAC-3). PATRIOT is employed by the German Air Force.

United States System
The U.S. Army Patriot missile system entered active service in 1985 and was deployed during operations DESERT STORM and IRAQI FREEDOM. U.S. systems have been stationed in a number of countries including Kuwait, Israel and Saudi Arabia. Current U.S. systems have been upgraded to the most modern configuration (PAC-3).