Intercepting a ballistic missile

1 LAUNCH DETECTION SATELLITES
Satellites detect an enemy missile launch by sensing the infrared heat signature from the missile plume and relaying this data to a command and control centre to initiate a response. Satellites can track an enemy missile only before it uses up its fuel and its motor is turned off.

WARHEADS AND DECOYS
Interception is more challenging when the enemy missile deploys multiple warhead decoys, which will travel along the same trajectory as the warhead and appear to be genuine.

KILL VEHICLE
The kill vehicle employs sophisticated sensors, computing and an onboard rocket motor to home in on its target and destroy it using only the force of the collision, which carries a kinetic "punch" equivalent to a 10-tonne truck travelling at 965kmh on impact.

3 INTERCEPTOR
The interceptor is the missile that carries the kill vehicle and attempts to intercept the missile in mid-flight to destroy it.

INTERCEPTION
If successful, interception occurs here.

Enemy missile launched en route to its target.

2 MISSILE TRACKING
Ground- and sea-based radar systems continually search for enemy ballistic missiles, detect and track them in real time, and attempt to discriminate genuine warheads from decoys.

Source: NUCLEAR THREAT INITIATIVE STRAITS TIMES GRAPHICS