



## Smart Walls For Borders

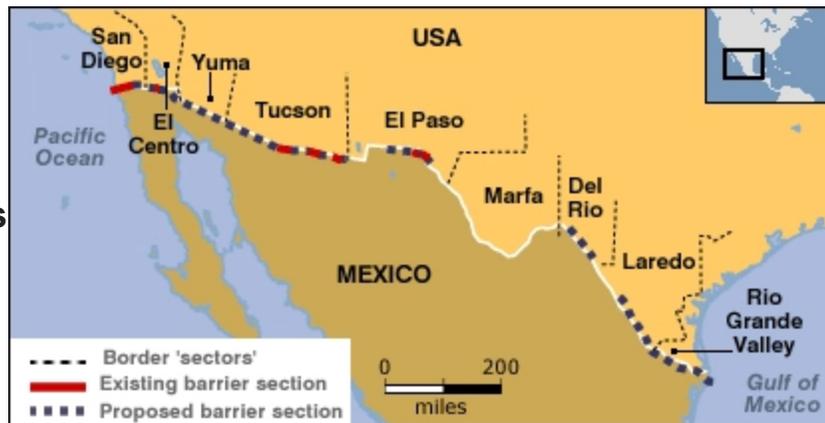
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### Why in News

Recently, an alternative **Smart Wall** has been proposed to replace the physical and armed patrolling with advanced surveillance technology at the **USA-Mexico border**.

Earlier in 2019, the **USA declared a national emergency** to fund construction of a border wall along the USA-Mexico Border citing "invasion" of drugs and criminals from Mexico.

### Key Points



#### • About Smart Wall:

- There is no one single definition for this recently-conceived solution, however It is **a collection of discrete technologies** that work together to prevent illegal entry, smuggling, and all the various threats posed by a porous border.
- It uses **drones, scanners, and sensors** to create a **technological barrier** too high to climb over, too wide to go around, and too deep to burrow under.

Using **Internet-of-Things (IoT)** technologies like in-ground sensors, security cameras and software solutions, a smart wall could **empower border officials with enhanced situational awareness** to prevent illicit activity.

- **Benefits of Smart Wall:**

- **Reduces Cost:**

- A smart wall can accomplish the same goals as a physical wall with a much smaller price.

- **Decreases Deployment Time:**

- Physical boundaries take years to build but smart border technology is ready to go.

- **Low Maintenance Costs:**

- Unlike a physical barrier, a smart wall would **allow border security officials to continuously adjust tactics to changing conditions.**
  - Ground sensors and IoT devices are **quick and easy to deploy and inexpensive to move and update.**
  - They require only a **fraction of the costs to maintain**, and can be implemented gradually and as needed.

- **Decreases Environmental Concerns:**

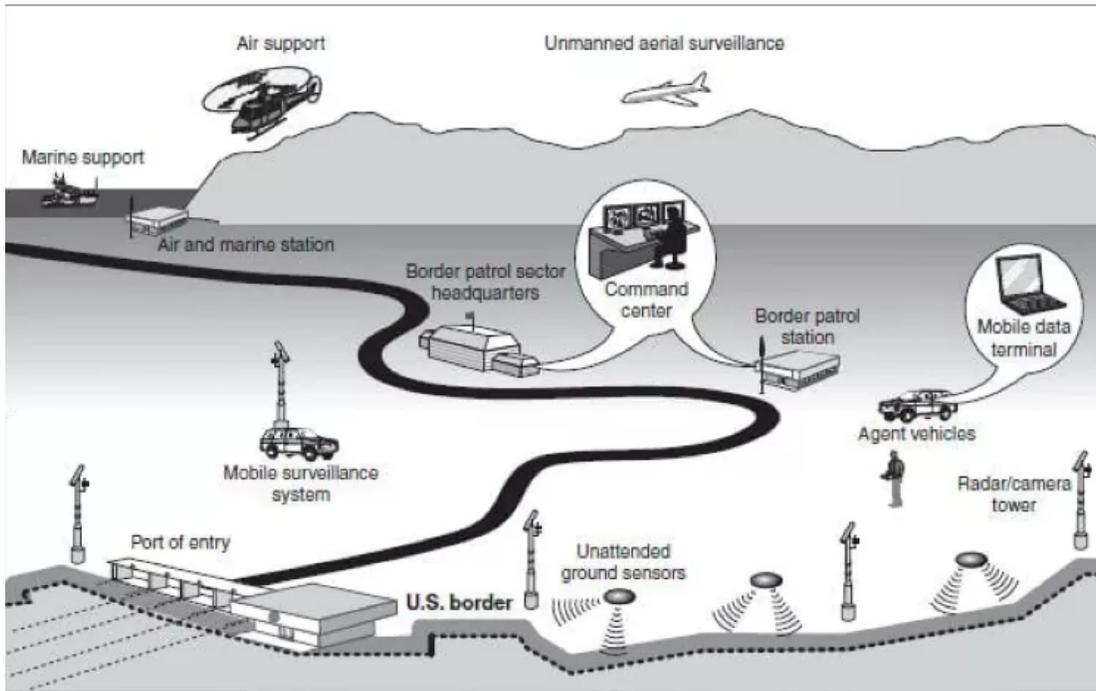
- A smart wall raises **minimal environmental concerns**, allowing wildlife and rainwater to pass freely through the area.
  - Most smart devices can tell the difference between people and animals, **alerting officers when a human attempts to cross the border illegally** while leaving wildlife alone.

- **Overcomes the Limitations of Terrain:**

- Rough terrain is difficult to patrol, which could leave portions of the wall vulnerable to breaches.
  - Digital technology, however, allows for **enhanced surveillance across vast terrain.**
    - **Devices** like cameras and in-ground sensors **allow patrolmen to survey hundreds of miles at once**, and take informed action should the need arise.
    - **Real-time alerts** make it easy to respond to activity from immigrants approaching the border or to a lost hiker looking for supplies.

- **Reduces Land Requirement:**

- To construct a border wall, the government would need to seize property from local landowners.
  - However, Small and relatively non-invasive, smart wall technologies would require far fewer land seizures.



- **Need of Smart Wall in India:**

- A critical factor that must be considered to enable the usage of such a system along Indian borders is that the **terrain in the region is rugged, and, furthermore, not even clearly defined.**
- Such a system, even if not feasible for India's long boundaries, may still be **deployed to enhance critical security establishments** of the country and complement the already existing physical fencing and walls.
- It is **imperative for Indian armed forces to be well equipped and simultaneously have the latest technological** advantage over its enemies.
- Experts should explore this idea to **effectively counter the problem of border infiltration.**

- **Smart Fencing in India:**

Two pilot projects covering about 71 Kms on Indo-Pakistan Border (10 Kms) and Indo-Bangladesh Border (61 Kms) of **Comprehensive Integrated Border Management System (CIBMS)** have been completed.

- CIBMS involves deployment of a range of state-of-the-art surveillance technologies — **thermal imagers, infra-red and laser-based intruder alarms, aerostats for aerial surveillance, unattended ground sensors** that can help detect intrusion bids, **radars, sonar systems** to secure riverine borders, **fibre-optic sensors** and a command and control system that shall receive data from all surveillance devices in real time.
- **BOLD-QIT** (Border Electronically Dominated QRT Interception Technique) under CIBMS on Indo- Bangladesh border in Dhubri district of Assam is also being used.

**Source: TH**