3. Visual Positioning System

Prelims Level: Science & Technology

Mains Level: Awareness in the fields of IT, Space, Computers, Robotics, Nano-Technology, Bio-Technology and Issues Relating to Intellectual Property Rights.

- In the past, people were depending on some passer-by for directions to reach any destination that is unknown to them.
- This practice was common, until we got **GPS** - a revolutionary invention that changed the way we navigate. **Global Positioning System -** has not just made our way of travel easy and comfortable, but has made ourselves self-dependent.
- However, in order to improve navigation further with greater accuracy and bring in new tech advancements, technology providers are experimenting with a number of technologies. One of them is the **Visual Positioning System** or **VPS** that has been designed to overcome challenges of GPS, and is many times more accurate.

What is VPS?

- Visual Positioning System (VPS) is the newly developed feature for the **Google Maps**. VPS will use the camera of the user's smartphone to **identify their surroundings**, and thereby visually display a blown-up 3D direction such as **lit-up arrows and precise steps**, in the screen of the smart phones.

VPS- "am I going the Right Direction?"

- Leveraging the possibilities of GPS system and camera in the mobile phones and embedding the same with **augmented reality,** Google is giving a new definition for navigation system.
- The VPS uses Google's extensive back-end data and the device's camera to **analyse the surroundings** and **visually communicate the route to the users.**
- The greater accuracy of the features makes it really easy for the users to **identify where they are**.

What makes Visual Navigation a Gamechanger?

- At times, when the standard GPS technology is not enough, this new visual system can offer the users ample support to fix their navigation concerns.
- VPS can be a great **aid to the visually-impaired**, the close-up visual assistance can be a life changing assistance to the visually-impaired to **make their navigation a lot easy**.

- The system not just helps with routing directions but makes the best **use of Augmented Reality** so as to retrieve supplementary information by taking clues of nearby **signboards and shops**.
- The technology can really come handy **in Urban Areas with Tall Buildings** where, the GPS is prone to the phenomena of **GPS drift**.

The Future with the VPS:

- VPS is poised to supplement existing location data models to further the advances **in navigation, marketing, and even robotics** in the future.
- VPS is capable of **determining indoor and outdoor location** through ad-hoc visual markers.
- Distinguishing features such as signage, buildings, and walls are identified by scanning geolocated photos, enabling **Unprecedented Accuracy in location data**.
- **Augmented Robotics-** Autonomous robots, from drones to dogs to cars, could access VPS services and improve their navigation ability. VPS data could eventually **eliminate the need for Expensive Sensors** in robotics.
- **Augmented Marketing**- The system can capitalize the immersive potential of AR to create compelling marketing content in the digital platforms.