Geo-fencing app will be used to locate quarantine violators

Context:

The Centre is using powers under the Indian Telegraph Act to fetch information from telecom companies every 15 minutes to track COVID-19 cases across the country.

COVID-19 Quarantine Alert System (CQAS):

- The Department of Telecommunications (DoT) has shared a standard operating procedure (SOP) with all telecom service providers regarding the application called COVID-19 Quarantine Alert System (CQAS).
- The government has tested this application which triggers e-mails and SMS alerts to an authorised government agency if a person has jumped quarantine or escaped from isolation, based on the person’s mobile phone’s cell tower location.
- The CQAS will prepare a list of mobile numbers, segregating them on the basis of telecom service providers, and the location data provided by the companies will be run on the application to create geo-fencing.
- The “geo-fencing” is accurate by up to 300 m.

What is Geo-fencing? (PT SHOT) S&T

- A geofence is a virtual perimeter for a real-world geographic area.
- Geofencing is a location-based service in which an app or other software uses GPS, RFID, Wi-Fi or cellular data to trigger a pre-programmed action when a mobile device or RFID tag enters or exits a virtual boundary set up around a geographical location, known as a geofence.

How does the application work?

- The system will collate phone data, including the device’s location, on a common secured platform and alert the local agencies in case of a violation by COVID-19 patients under watch or in isolation.
- It is said that the location information is received periodically over a secure network for the authorised cases with due protection of the data received.

Details:

- The States have been asked to seek the approval of their Home Secretaries under the provisions of Section 5(2) of the Indian Telegraph Act, 1885, for the specified mobile phone numbers to request the DoT to provide information by email or SMS in case of violation of “geo-fencing”.
- The particular provision under the Act, amended multiple times since 1885, authorises the State or the Centre to access information of a user’s phone data in case of “occurrence of any public emergency or in the interest of the public safety.”
- Kerala was one of the first States to use geo-fencing to track COVID-19 cases.
Addressing the privacy concerns:

- It said that the phone number should be deleted from the system after the period for which location monitoring is required is over.
- The data would be deleted four weeks from thereon.
- The data collected shall be used only for the purpose of Health Management in the context of COVID-19 and is strictly not for any other purposes. Any violation in this regard would attract penal provisions under the relevant laws.

Issues:

- The geo-fencing will only work if the quarantined person has a mobile phone from Airtel, Vodafone-Idea or Reliance Jio.
- “BSNL/MTNL” do not support location based services. BSNL and MTNL are government-owned.

S&T terms:

Centre for Development of Telematics

- C-DOT was established in August 1984 as an autonomous Telecom R&D Centre of DoT.
- It is a registered society under the Societies Registration Act, 1860.
- It is a registered ‘public funded research institution’ with the Department of Scientific and Industrial Research, Ministry of Science & Technology.

Global Positioning System

- The Global Positioning System is a Global Navigation Satellite System (GNSS), used to determine the ground position of an object. It is a US-owned utility that provides users with Positioning, Navigation, and Timing (PNT) services.

Radio-Frequency Identification

- Radio-Frequency Identification (RFID) is the use of radio waves to read and capture information stored on a tag attached to an object. A tag can be read from up to several feet away and does not need to be within the direct line-of-sight of the reader to be tracked.

Wi-Fi

- Wi-Fi is the name of a wireless networking technology that uses radio waves to provide wireless high-speed Internet and network connections. WiFi network enables connection between two or more devices wirelessly for data sharing purposes.

II. Suggestions for Covid-19

Recently, the Prime Minister of India has held a video conference with the Chief Ministers of the
States on tackling the Covid-19 pandemic. He emphasised on the importance of formulating a common exit strategy to ensure a steady re-emergence of the population after the lockdown is over.

Key Suggestions

- Seamless supply lines for medical equipment and drugs and raw materials.
- Coordinated and prioritised testing, tracing, isolation and quarantine among and in all states.
- Appointment of district-level disease surveillance officers for optimum penetration of the combating strategy.
- Ensuring that there are separate hospitals for Covid-19 patients and proper protection to the doctors attending the patients.
- Going beyond the route of Agricultural Produce Marketing Corporations (APMC) for the procurement of this season’s harvest. Starting a truck pooling scheme for ferrying produce to the market.
- Using the amount from the State Disaster Response Fund (SDRF) to fight COVID-19. The Centre will release ₹11,000 crore from the SDF by the end of April.
- Rapid disbursement of grants under the Pradhan Mantri Gareeb Kalyan Yojana.
- Recruitment of volunteers from the National Cadet Corps (NCC) and the National Service Scheme (NSS) in the effort to combat the crisis.
- Coordination between NGOs and crisis management groups and sharing of strategies.
- Promotion and use of traditional immunity boosting methods mentioned in Ayurveda to minimise the number of people with weak immunity. The Ministry of AYUSH has also issued an advisory regarding this.

Scientists on Lockdown

- Lockdown is only a temporary solution and this period should be used to prepare the healthcare system to avoid its social costs and to realise long-term epidemiological benefits.
- The government needs to reveal a post-lockdown plan that will ensure that the rate of new infections is kept low in a sustainable manner after the lockdown ends.
  - Social distancing and better hygiene are helpful yet insufficient measures by themselves.
- If the lockdown period will not be used responsibly, it might lead to a possible bounce-back effect.
  - The current restricted testing-policy creates the risk that a large number of mildly symptomatic or asymptomatic cases will remain undetected even at the end of the lockdown period.
  - These cases could easily serve as the nucleus for the epidemic to bounce back.
- The problem of reverse migration (from cities to sub-urban/rural areas) has also been highlighted. The exodus triggered by the lockdown will rapidly spread the virus to all parts of the country.
  - This can lead to both an epidemiological and a humanitarian crisis.
- Instead of stopping the reverse migration, the forces should be used to stock up food-grains, ensure fast cash transfers for the food-security and welfare of workers.
- Scientists have offered their complete support to the people and possible expertise in combating this disease and in ensuring that the country emerges from this difficult period.
with as little loss of life as possible.

New Developments

- **Alternative Sealant**
  - The Defence Research and Development Organisation (DRDO) has developed a **special sealant as an alternative to seam sealing tape** which is critical in Personal Protective Equipment (PPE).
  - The alternative sealant is based on the sealant used in submarine applications.
  - DRDO can mass produce this glue through the industry to support the seam sealing activity by suit manufacturers.

- **Bio Suit**
  - DRDO has also developed a **bio suit to keep medical and other personnel safe from the virus**.
  - Scientists developed it with the help of the industry at various DRDO laboratories by applying the technical know-how and expertise in textile, coating and nanotechnology.
  - It has been subjected to rigorous testing for textile parameters as well as protection against synthetic blood.
  - The production of bio-suits was hampered due to the non-availability of seam sealing tapes but the development of the alternative sealant will boost its production now.

- **Handheld InfraRed Temperature Sensor**
  - Naval Dockyard, Mumbai, has designed and developed its own **handheld InfraRed (IR) based temperature sensor for screening** people at its entry gates.
  - The instrument has been manufactured through in-house resources at a cost of under ₹1000, a fraction of the cost of the temperature guns in the market.

III. The Centre is planning to start the next academic year virtually.

- Many schools have been shut since early March due to the COVID-19 pandemic, even before the countrywide lockdown.

Key Points

- This means that the new academic calendar will begin as usual in April for classes 9 to 12, though the last academic year may have been somewhat truncated, with examinations postponed in some cases including the CBSE exams for classes 10 and 12.
  - Recently, it has been decided that the cbse will conduct exams only for the main subjects: required for promotion or may be crucial for admission in higher educational institutions.
- The Centre plans to restart classes in the distance mode, with teaching via dedicated TV and radio channels in English and Hindi.
  - There is an existing program, Swayam Prabha, which is a group of 32 DTH channels devoted to telecasting high-quality educational programmes on 24X7 basis using the GSAT-15 satellite.
- National Institute of Open Schooling (NIOS) has been asked to create a structured programme for schools class-wise. This is being done along with the National Council of
Educational Research and Training (NCERT) using their syllabus.
- The material will be ready for use by schools following the NIOS or the Central Board of Secondary Education (CBSE) syllabus.
- For the State Boards
  - Digital Infrastructure for Knowledge Sharing (DIKSHA) mobile app has been offered to States as a platform to provide content in local languages.
  - If States are willing to produce the content in local languages, the Centre can give them 2-3 hours on the channel.

Digital Infrastructure for Knowledge Sharing

- Diksha Portal was launched by the Ministry of Human Resource Development (MHRD) in 2017 for providing a digital platform to teachers giving them an opportunity to learn and train themselves and connect with the teacher community.
- It is built considering the whole teacher’s life cycle - from the time student teachers enroll in Teacher Education Institutes (TEIs) to after they retire as teachers.
- States, government bodies and even private organisations, can integrate DIKSHA into their respective teacher initiatives based on their goals, needs and capabilities.
- It also provides access to NCERT textbooks and lessons, following the regular school curriculum.

National Institute of Open Schooling

- NIOS, formerly known as National Open School (NOS) was established in November, 1989 as an autonomous organisation in pursuance of National Policy on Education 1986 by the Ministry of Human Resource Development (MHRD).
- NIOS provides a number of Vocational, Life Enrichment and community oriented courses besides General and Academic Courses at Secondary and Senior Secondary level.
- It also offers Elementary level Courses through its Open Basic Education Programmes (OBE).
- Government of India has vested NIOS with the authority to examine and certify learners registered with it upto pre degree level courses whether Academic, Technical or Vocational.

IV. The demand for work by households under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) programme surged to a nine-year high in 2019-20.

According to the MGNREGA official portal, 5.47 crore households sought MGNREGA works, the highest since 2010-11, when the number was 5.5 crore. More individuals too worked under MGNREGA in 2019-20, with 7.86 crore employed at various sites across the country. This is the highest since 2012-13, when 7.97 crore individuals worked under this programme. The disruption caused by the coronavirus lockdown, however, may impact the final figure of the person days generated in March 2020.

The gram panchayats not recording any MGNREGA expenditure has also declined. This shows that more and more panchayats are using MGNREGA to provide unskilled work to the
unemployed. These new MGNREGA figures coincide with the sharp fall in GDP growth rate to 5% in 2019-20, the lowest in a decade. The demand for works under MGNREGA is surging despite the fact that wages have been flattening in recent years. In 2019-20, average MGNREGA wage per day per person was Rs 182.09, barely Rs 3 higher than Rs 179.13 in 2018-19.

The data also showed that 263.73 crore person days were generated during 2019-20, slightly lower than 267.96 crore in 2018-19 but significantly higher than the total person days generated during each financial year from 2012-13 to 2017-18. During 2019-20, the Centre released Rs 72,162.13 crore for the MGNREGA, the highest ever amount, and substantially higher than the Rs 62,125.07 crore released in 2018-19.

V. Recently, the West Bengal government roped in Nobel laureate Abhijit Banerjee to spread awareness of COVID-19.

Abhijit Banerjee along with his wife economist Esther Duflo have agreed to help the West Bengal government.

- **Abhijit Banerjee, Esther Duflo** along with **Michael Kremer** were awarded the **Nobel Prize in Economics “for their experimental approach to alleviating global poverty.”**
- The experiment-based approach of the three laureates has transformed development economics and turned it into a “flourishing field of research”.
- The three adopted an **evidence-based approach** to apply theory to real-life situations using randomised trials and assessing the outcomes.
  - The approach is derived from the concept of **clinical trials in the pharmaceuticals industry**.
  - The effort was to understand the impact of interventions to achieve desirable outcomes.
- **Example:** The experiment that Mr. Banerjee and Ms. Duflo carried out in Rajasthan some years ago would explain the concept better.
  - Despite immunisation being free, women were not bringing in their children for the vaccination shot.
  - The two economists decided to give a bag of pulses free to women who brought their babies for vaccination. Word soon spread and the rate of immunisation shot up in the region.
- One of their studies also resulted in benefiting 5 million children in India through programmes of remedial tutoring in schools.

👍 Jai Hind Jai Bharat