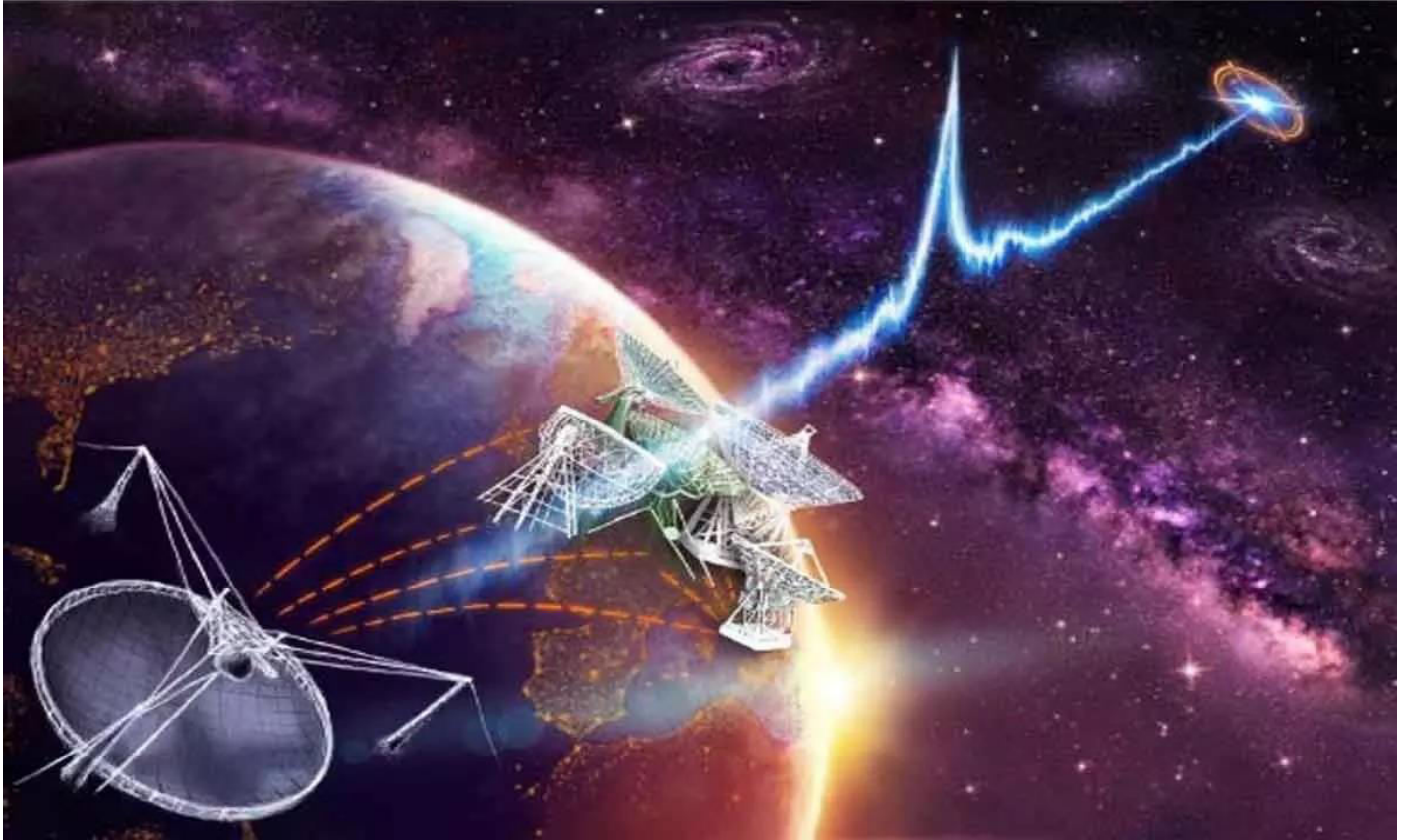


## Astronomers detect mysterious fast radio burst with a 'heartbeat' pattern

(GS Paper 3, Science and Tech)

### Why in news?

- Recently, astronomers have detected a strange and persistent radio signal from a far-off galaxy that appears to be flashing with surprising regularity, similar to a 'heartbeat'.



### Key Highlights:

- The signal is classified as a **Fast Radio Burst (FRB)**, an intensely strong burst of radio waves of unknown astrophysical origin that typically lasts for a few milliseconds at most.
- However, this new signal, labelled **FRB 20191221A**, persisted for **up to three seconds** about 1,000 times longer than the average FRB.
- Within this time, they detected bursts of radio waves that **repeat every 0.2 seconds** in a clear periodic pattern, similar to a beating heart.
- FRB 20191221A is **currently the longest-lasting FRB**, with the clearest periodic pattern, detected to date. The source of the signal lies in a distant galaxy, several billion light-years from Earth.

### Source:

- However, exactly what that source might be remains a mystery, though astronomers suspect the signal could emanate from either a radio pulsar or a magnetar, both of which are types of neutron stars extremely dense, rapidly spinning collapsed cores of giant stars.
- But the main difference between the new signal and radio emissions from our own galactic pulsars and magnetars is that FRB 20191221A appears to be more than a million times brighter.
- The luminous flashes may originate from a distant radio pulsar or magnetar that is normally less bright as it rotates and for some unknown reason ejected a train of brilliant bursts, in a rare three-second window that CHIME was luckily positioned to catch.

### CHIME:

- CHIME is **Canadian Hydrogen Intensity Mapping Experiment**, an **interferometric radio telescope** consisting of four large parabolic reflectors that is located at the Dominion Radio Astrophysical Observatory in British Columbia, Canada.
- The Canadian Hydrogen Intensity Mapping Experiment is a revolutionary new radio telescope designed to map the large-scale distribution of matter in the Universe in 3D.
- This map will answer major questions about the evolution of the Universe and cosmology.

## Hindustan Zinc gets to set up 30 KTPA plant

**(GS Paper 3, Science and Tech)**

### Why in news?

- Vedanta group firm **Hindustan Zinc** is looking at expanding its footprint in the production of zinc alloys and HZAPL has received **approval to set up a 30 kilo tonnes per annum plant (KTPA)**.
- Hindustan Zinc Alloys Pvt Ltd (HZAPL) is a subsidiary of Hindustan Zinc.



# HINDUSTAN ZINC

**Zinc & Silver of India**

### Details:

- The plant would be set up at Dariba, in Rajasthan.
- The company is also investing in the development of new products through down-stream applications.

### Focus area:

- The company's key focus area in this context is innovation of new products in lead alloys and increased penetration of zinc alloys.
- The company has also got the go-ahead from board to undertake a long-term captive renewable power development plan, up to a capacity of 200 mw, in furtherance of its net-zero goal.
- The move is in line with the company's strategic purpose of **reducing dependence on thermal power by scaling up the renewable energy** to cover 50 per cent of our energy requirement in the next three years and reduce the greenhouse gas (GHG) emissions from its operations.

### Net-zero commitment:

- During FY'22, it has also signed a pact with CDP science-based incubator programme for setting targets for net-zero commitment.
- The company is continually working towards reducing its carbon footprint and lowering the impact of its business on the environment.
- These efforts are aimed to improve operational efficiencies, ensure optimal utilisation of natural resources, and increase the use of renewable energy in its plants and processes.

### Way Forward:

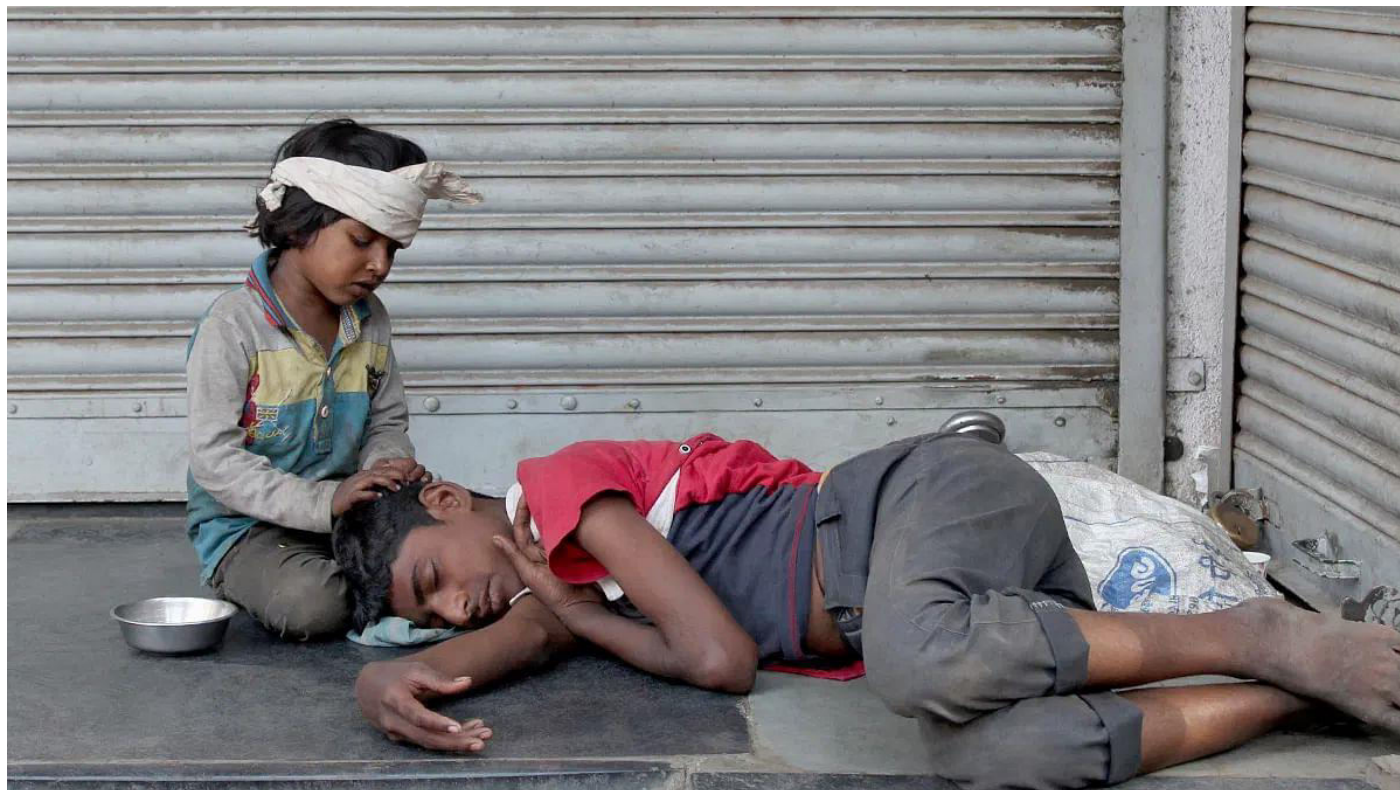
- The move will make way for the production of value-added zinc alloy products and enable the company to **deliver international quality products in the domestic market.**

## NCPCR asks states to identify hotspots of street children

(GS Paper 2, Governance)

### Why in news?

- Recently, the **National Commission for Protection of Child Rights (NCPCR)** asked states to identify the **hotspots of street children** and pass on that information to relevant authorities to rehabilitate them.
- The children have been rescued from 75 such hotspots in the last eight months and 270 FIRs have been registered in the matter.



### Key Highlights:

- An online portal named ‘Tracking Portal for Out of School Children’ was also launched.
- The states were asked to **appoint nodal officers to provide information regarding the portal** to be maintained by the National Commission for Protection of Child Rights (NCPCR).
- Talking about children in street situation (CISS), NCPCR said 25,000 children have been in **Bal Swaraj's Street Children Portal (CISS)** and it is in the process of rehabilitating them.

### ‘Baal Swaraj’:

- Baal Swaraj is a portal launched by NCPCR for online tracking and digital real-time monitoring mechanism of children in need of care and protection.
- The portal has two functions- COVID care and Children in Street Situations (CiSS).
- COVID Care link caters to the children who have lost either or both parents due to COVID-19 or otherwise post March 2020.

### NCPCR:

- National Commission for Protection of Child Rights (NCPCR) has been constituted by the Government of India, as a statutory body under section 3 of the Commissions for Protection of Child Rights (CPCR) Act, 2005 for dealing with the protection of child rights and related matters.
- Under section 13(1) of the Commissions for Protection of Child Rights (CPCR) Act, 2005, has provided certain functions to ensure that the rights of children are protected especially the most vulnerable and marginalized.
- In addition, the Commission has also been mandated to monitor the implementation of the Juvenile Justice (Care & Protection of Children) Act, 2015, Right of Children to Free & Compulsory Education (RTE) Act, 2009 and Prevention of Children from Sexual Offences Act, 2012.

## **Legal Information Management & Briefing System (LIMBS)**

**(GS Paper 2, Governance)**

### **Why in news?**

- The Ministry of Law and Justice has unveiled a web-based application called LIMBS (Legal Information Management & Briefing System).
- This is an easy-to-use and efficient application will be used for tracking court cases involving the Government of India.



### **Key features of LIMBS**

- Dashboard based platform with advanced data analytics
- Facility of CNR (Case Number Record) number. Now, users can search cases using their CNR numbers.
- Direct integration with websites of various courts through APIs
- Conduct and Supervision of Litigation by DOLA (Department of Land Administration), CAS (Column Address Select or Strobe)/Litigation Sections of High Courts on behalf of Union of India in the Hon'ble Supreme Court, High Courts and Subordinate Courts
- Separate domain to enter and monitor Administrative Mechanism for Resolution of Commercial Disputes
- Supervision of cases, uploading of fee bills of Law Officers, Panel Counsels and advocated is also facilitated

### **Way Forward:**

- It is a cutting-edge and convenient online tool that comes with myriad time and effort saving features and is accessible to all stakeholders round-the-clock.