HAL puts on show lethal new warfighting system

AM SHUGA

Techania, Bengiluu, 4 February

India 2021 with a gilise, laser-lit, Gilal) is entraliging the attendees of Aero india 2021 with a gilise, laser-lit, Gil-seal encode-up that shows how the indian Air Force (IAF) will fight the wars of the future.

The highlight of HAI's display is the Combat Air Teaming System (CATS), a combination of manned and unmanned systems that will operate in wartime in tandem, reinforcing each other's strengths and compensating for the other's valinerabilities.

This new concept moves on from the current practice of groups of manned fighter aircraft entering enemy airspace and, with each one essentially fighting as an isolated platform, yairspace, where they risk being shot down, captured and held hosage, thereby tasking a purely military operation into the political realm instead, it envisions manned aircraft functioning as airborne controllers of Jehal, unmanned vehicles that swarm in numbers into enemy airspace and overwhelm their defences.

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to the Th' at the clud of 2019, it inter-steed the air marshals enough for them to request an oversight role in the proj-ect, with the first step being the devel-opment of a "proof of concept", or an initial working prototype. While the IAF may offer to fund

resources.
The heart of the entire system is a mothership" called the CATS-MAX, based on a fighter like the Tejas LCA (light combat aircraft), which files at alittudes as high as 45,000 feet, remaining inside our own airspace.



ne mission.

The CATS-MAX could direct them, brough a secure data link, to strike round targets up to 350 km inside nemy territory, retaining the range to ty back a similar distance, dernatively, the unmanned craft

enemy territory, retaining the range to thy back a similar distance. Alternatively, the unmanned craft could be sent on a suicide mission 900-1,000 km deep, scarificing themselves for the sake of range.

"The cost of each Warrior would be about 440 crore, which could be written off depending upon the importance of the mission," said HAL's design chief, Arup Chatteriee.

The Warrior prototype on display is a sleek vehicle, about the size of a Maruti 800 car. It is built with staith design and Chatteriee is confident its low "Tada cross section" would ensure it is not detected — or detected too late — by onemy radar.

The Warrior will be powered by an upgranded version of the engine that HAL has already developed — the PTAR-P let that is used to power that Laisahya target vehicle. The third component of the system is the CATS Hunter, which is basically as maller Y batter, which is batter, which is basically as maller Y batter, which is batter,

race target.

The concept also visualises a CATS
INFINITY high altitude, pseudo-satelilte that can be launched as a control
whicle and stay aloft for up to three
months. It is powered by solar energy
and has huge wings to accommodate
the solar panels.

Compatibility hit as services buy different kinds of radio

Despite the appointment of a chief of defens staff (CDS) to coordinate procurement an interoperability between the army, navy an indian Air Force (IAF), all three services are following different paths while buying their next-seneration communication systems, known as "software defined radio" (SDR).

As a result, there will be a loss of com-

radio" (SDR).

As a result, there will be a loss of communications efficiency when, say, an
army signalier communicates with an
air force pilot, defeating the very purpose of upgrading radio equipment.
Even worse, the enemy could find
It easy to intercept communications because of lowered scurriy

tions because of lowered security protocols.

The LAF, which is ahead of the army and navy in buying futuristic SDR equipment, has chosen to equip its fighter aircraft, several kinds of transport aircraft, helicopters and ground stations with SDR developed by israeli firm Rafael Advanced Defence

Raisel Advanced Dele Systems. SDR is an entirely different kind of radio communica-tion compared to current digital sys-tems. The radio wave form is shaped by a see

tems. The radio wave form is shaped by a secure software program that makes it difficult to hack and inter-cept. SDR allows for secure voice, data and video transmission and has been described flippantly as "a highly secure WhatsApp". In fact, it is far

more sophisticated and secure.
In 2017, the IAF signed a
contract worth over \$100 million with Rafael for 500 SDR
sets that the Israeli firm has

sets that the Israeli firm has named the P-Met system. The next year, Rafael began integrating SRF sets into the IAP air-craft and grounds stations where they were intended to be deployed.

Each different type of aircraft, base, radar and guided weapon needed to be integrated perhaps;

separately and tested and certified fit for use. That process is almost complete, says Eli Hefets, Rafael's corporate regional director

Thereafter, the manufacture of the IAF's SOSDRIs to be carried out in Hyderabad in a Joint venture (JV) company called Astra Rafael Consys (ARC). Indian electronics firm Astra Microwave owns a 51 per cent stake in ARC, with the Rafael owns the remaining 49 per cent. I lefets says Rafael has already placed an order worth about \$50 million on ARC, and that the JV is contractually bound to supply the IAF with SDR sets that were more than 80 per cent indisenous.

als and chooses what it likes.
It is understood that the army will soon issue an expression of interest, invit-

interest, inviting firms to develop suitable SDR.
Hefets says the JV firm, ARC, intends to participate in the "Make 2" compensate of the state of th

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unmanned combat air vehicles (UCAVa) called the CATS Warriors. Taking off and flying autonomously at altitudes of 36,000-40,000 feet, these are basically "loyal wingmen" that are armed with a variety of

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Notice is hereby given pursuant to Regulation 47 of the SEBI (Listers)
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meeting of the Board of Directors of the Company will be held on Friday,
127 February, 221 inter alls to consider and approve Unaudited
Financial Results for the quarter ended December 31, 2020.
The information contained in this notice is also available on the websits
The information contained in this notice is also available on the websits

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Place: Vadodara Date: 04,02,2021

ASPENPARK INFRA VADODARA PRIVATE LIMITED PUBLIC NOTICE

Inviting Objections/ suggestions on Polition of Asper Vadodara Private Limited for approval of Truing-up for A determination of revised Aggregate Revenue Requ FY 2021-22 and tariff for FY 2021-22 for its Distribution Vad

The Petitioner, Aspenibus Intra Vactoriars Phrais Limited(Aspen), has set up a Multi sector SCz et Vilage Pipality and Alwa, Taiaka Niaghodia, set up a Multi sector SCz et Vilage Pipality and Alwa, Taiaka Niaghodia, 500 (2014) (2015). Solice of Oligans, under Section 3 of the SCZ Act. CSOS (2014) (2015). In accordance with the Ministry of Commerce (Actification dated Matrol, 2010 and under the provisions of the Electricity Act, 2003 (EA 2003) and in view of Horibit Commission Order datable October 16, 2009 in the martiner of grant of distribution Ricerica. Aspen is a determed Desiration Licensee in its SCZ.

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The Northe Commission vide its latter dated February 01, 2021 informed Appen that the Public has been registered. Further, vide the said steller, the Honties Commission directed Appen to publish a Public Notice William Commission directed Appen to publish a Public Notice Commission directed Appendix Public Notice Commission of the State Office of the Valodana Publish Limited all Survey No. 28, Milaga Phauller, Taladac Waghodan District Valodana Publish Limited (a) Guarde Office (Publish Commission Commission (a) Guarde Distribution of the Publish Commission (a) Publish Commission (a)

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Bank of Baroda, Head Office Bar bids from General Insurance following insurance policies fo 31,03,2022

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The IAF, which is ahead of the army and navy in buying futuristic SDR equipment, has chosen to equip its aircraft with SDR developed by Israeli firm Rafael Advance Defence Systems

1) 26.02.2021 before 5.00 PM

Place: Baroda Date: 05,02.2021



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4 (a) Referent forms and
(b) Details of authorized expensions

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commissioners of a companie markening modulation process of the Makadi Co
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