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Please be informed that Alexandra Fire Station and Sengkang Fire Station will not be hosting the weekly Saturday Fire Station Open House on 5 July 2025. Please refer to the <u>list of other Fire Stations</u> that are available for visits.

Leveraging Robotics in SCDF

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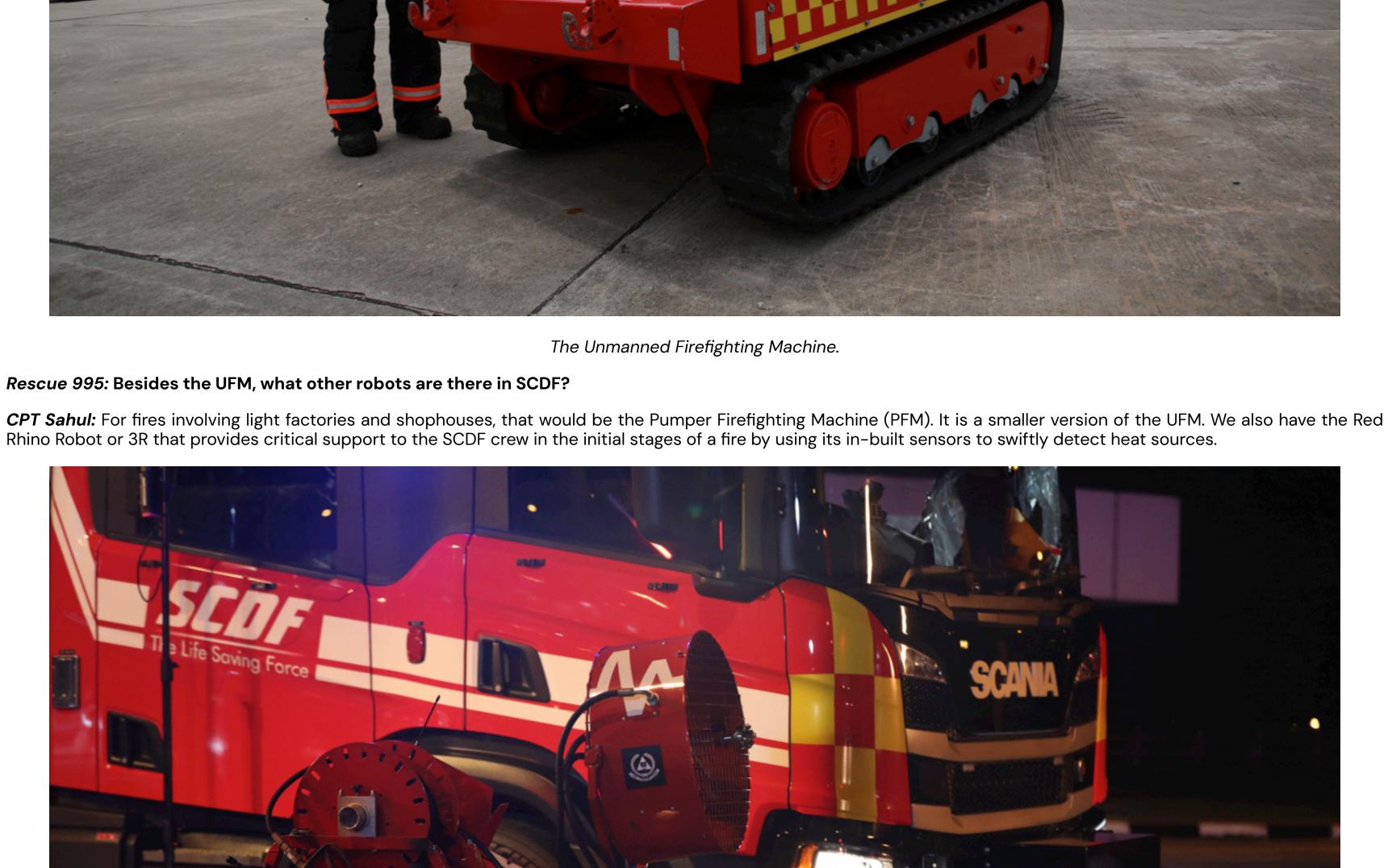
**Technologies, People** — 15 November 2021

Meet Captain (CPT) Sahul Hameed S/O B Sardhar, who has been driving the implementation and adoption of technologies in SCDF to bolster the organisation's future capabilities in support of its transformation vision since 2020.

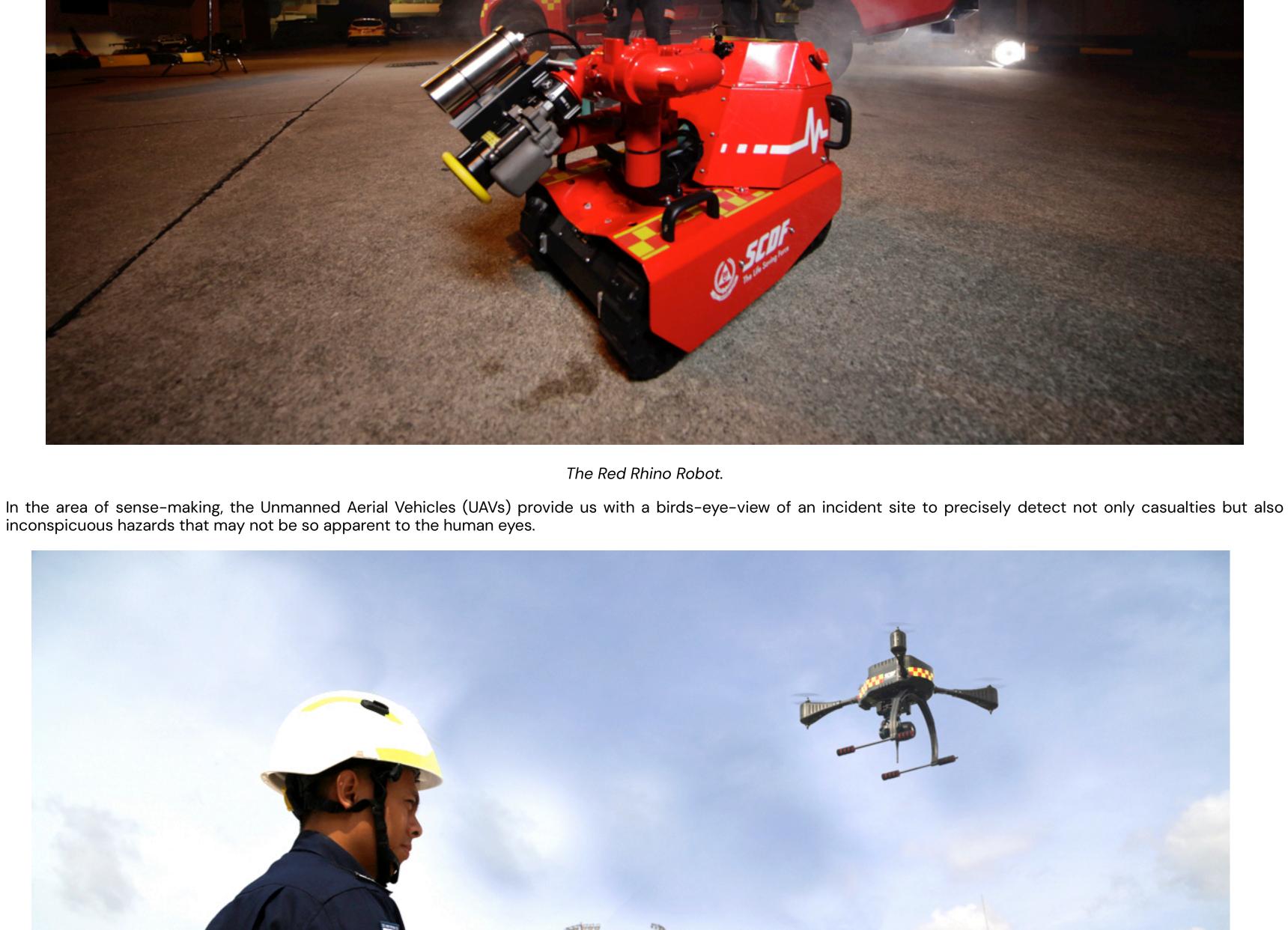


frontliners to focus on other critical aspects of our operation. This significantly contributes to our operational excellence.

precise actions to cut off the "fuel" at the heart of the fire without risking our officers to do so. The UFM is remotely controlled by just one person and this also frees up our



The Pumper Firefighting Machine (foreground).



Unmanned Aerial Vehicle (manoeuvring in the air).

For search-and-rescue missions, the Remotely Operated Underwater Vehicle (ROV) speeds up the detection of potential life in intricate underwater rescue operations by

using the dual sonar (echo-location) and image-capturing capabilities.

The



Rescue 995: Tell us more about the modus operandi in robotic deployment during firefighting operations? **CPT Sahul:** We are rolling out a 2-tier approach for the firefighting robots in mitigating fire incidents.

In Tier 1, the PFM and 3R will be placed at every fire station in enabling them to be quickly deployed to small and medium scale fires. The Tier 2 robots, consisting of the more

These Tier 2 robots together with their Tier 1 counterparts will be collectively deployed to tackle large-scale fires. With this tiered robotic approach, we forecast a nearly 50% reduction in the number of firefighters needed to be committed into the high-risk areas during offensive firefighting operations. We aim for this 2-tier approach to be fully

Moreover, teleconferencing, augmented reality, low-latency communication networks and sensor technology, just to name a few, are becoming increasingly mature. As such, we will incorporate such technologies into our existing arsenal of robots to further enhance our frontline emergency response. For example, today we are manually deploying

for each mission. This final stage will represent the pinnacle of SCDF's integration with robotic technology in its life saving mission. But of course, central to all these exciting

powerful, next-generation UFM as well as the soon-to-be rolled out High Mobility Modular Machine (H3M), will be placed strategically at certain fire stations.

operationalised by 2023. Rescue 995: Wow, a 50% reduction in manpower! That is indeed remarkable! CPT Shahul, my final question: What is SCDF's vision to further leverage the robotic technology? CPT Sahul: Together with the Home Team Science and Technology Agency (HTX) and other SCDF's strategic partners, we have come up with a 10-year roadmap on our

robotics development. Meanwhile, we are tapping on emerging technologies to further propel our existing robots.

robots from our emergency vehicles upon arriving at the incident site. In the near future, these robots can be autonomously deployed to carry out a range of multi-tasks from laying hoses, fighting fires to transporting casualties. In the later stages of our robotic roadmap, we envisioned the use of swarm technology to manage a whole fleet of sophisticated, advanced capabilities robots at the incident site, all being coordinated with the touch of buttons from an integrated console. To put it simply, this will allow a single operator to deploy multiple robots performing a slew of functions. Above all, we envision a state where artificial intelligence (AI) robots are able to automatically coordinate among themselves to complete various complex tasks

future developments is the further training and enhancement of skill sets of our most precious asset, our people.

**People** 

08 May 2025

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09 Apr 2025

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20 Jun 2025

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