



This photo provided by NASA/JPL-Caltech in June 2020 shows a 3-by-5-inch (8-by-13-cm) aluminum plate between the wheels at center and right, which commemorates the impact of the COVID-19 pandemic and pays tribute to the perseverance of healthcare workers around the world, attached to the Perseverance Mars rover, in Pasadena, California. NASA is pressing ahead with a July 20 launch, despite the pandemic. (AP)

Telnet works to enhance Earth observation

First launch of satellite highlights Tunisia tech

TUNIS, Tunisia, June 18, (AP): When 35-year-old Tunisian farmer Azyz Ben Mustapha looks to the future, he feels a growing sense of unease.

In recent years, climate change and pests have reduced harvests in the region, making life difficult for farmers like Ben Mustapha.

"Climate change is already visible – especially with the cultivation of cereals," he says. "Winters are getting shorter, hotter and dryer. Water shortages during the summer are becoming the norm."

Ben Mustapha manages 100 hectares (250 acres) of lush green pasture in Kalaat el-Andalous, about 30 kms (19 miles) north of Tunis, where he has been growing olives, cereals and livestock since 2013.

"If we could monitor production better and receive more information in advance so that we can properly manage crops ... This could really help," said Ben Mustapha.

Tunisian tech company Telnet may have the solution to Ben Mustapha's woes.

Later this year the company plans to launch Tunisia's first satellite, called Challenge One, which will improve the provision of data from the earth, including climate information. The small satellite will be launched by a Russian Soyuz spacecraft from Baikonur, Kazakhstan. If it is successful, Telnet plans to roll out a constellation of 30 additional satellites over the next decade.

The satellite will mark Tunisia's first venture into space. The African space market is now worth over \$7 billion annually, according to the website Space in Africa which reports that it "is likely to grow over 40 percent in the next five years." From 1998 to 2019, 32 satellites were launched by eight African countries and three other satellite projects were funded by African institutions. Fifteen of these were launched in the last four years.

Telnet hopes to improve earth observation of Tunisia and create new technological opportunities that could assist the country's agricultural production, as well as its health and maritime sectors, from tracing the effects of pollution to monitoring the weather.

"Today there are satellites for geolocation and navigation, communications and television. We decided to work with internet technology – the Internet of Things – because it's the future," said Telnet CEO Mohammed Frikha, in an interview at the company's hulking, galactic headquarters in downtown Tunis.

The market for this technology is unlimited, said Anis Youssef, Telnet's Research and Innovation director.

"Take, for example, solar pumps in the Sahara. The technology we are developing will permit users to control the solar pumps remotely, to irrigate certain areas during the most useful periods of time," he said.

Telnet has identified a diverse range of uses for the satellites, from tracking livestock that cross Tunisia's borders into Algeria or Libya, to monitoring cargo ships on the Mediterranean.

"There is a multitude of functionalities and each device can offer a function that we can adapt to the needs to different clients and users" said Youssef, while showing AP around Telnet's laboratories in which dozens of young engineers are at work programming different parts of the satellite.

Each nano-satellite in the constellation will be controlled in outer space from Telnet's laboratories, he said.

Tunisia's small, low orbit satellite is relatively inexpensive. Just a foot long and made of light, stainless steel, it's hard to imagine it jetting off into space. In comparison to a large, high altitude geo-

satellite that can cost hundreds of millions of dollars, Tunisia's nano-satellite cost just over \$350,000, according to Telnet.

Unlike the space endeavors of its African neighbors, Tunisia's satellite is almost entirely locally made.

Of the African nations that have already launched satellites, such as Algeria, Egypt and Nigeria, most tend to buy their satellites, ready-made, from Russia or China. While the manufacturing and launch of Tunisia's satellite is supported by Telnet's international partners, a team of Tunisian engineers have developed and built the satellite's internal programming.

"Telnet's specificity is that we are not buying this satellite – we are making it ourselves," said Youssef.

The impending launch of the satellite highlights the socio-political strides Tunisia has made since the Arab Spring in 2011, when Tunisians peacefully toppled dictator Ben Ali. Tunisia remains one of the movement's few bright spots, after similar uprisings in countries such as Syria and Libya led to violent civil wars.

Frikha, recently dubbed 'Tunisia's Elon Musk' in the journal Jeune Afrique, believes that just as Tunisia prevailed in its fight for democracy, it can also lead in technological innovation. On his desk sits a miniature rocket emblazoned with the Telnet logo.

"This satellite can give Tunisians confidence that we are capable of being leaders in technology," he said. "With a strong democracy and technology we can have a respected place in the world, even if we only have a population of 10 million and few natural resources."

Pavel Luzin, a political analyst who specializes in the space industry, said Tunisia's political progress has facilitated the development of the satellite.

"The democratization of Tunisia during the Arab Spring has made it possible for Tunisian companies to invest in the development of satellites," he said. "Because under a dictatorship there is corruption, and corruption makes it difficult to invest in long term, technological projects."

Also:

BEIJING: Citing technical reasons, China has delayed the launch of the final satellite to complete its Beidou Navigation Satellite System constellation that emulates the US Global Positioning System.

The official Xinhua News Agency said Tuesday's mission aboard a Long March-3 rocket from the southwestern satellite launch base of Xicheng was scrubbed after pre-launch checks discovered "product technical problems."

No details or a new launch date were immediately announced. China's space program has developed rapidly over the past two decades as the government devotes major resources toward developing independent high-tech capabilities – and even dominating in fields such as 5G data processing.

When completed, this third iteration of the Beidou system will provide global coverage for timing and navigation, offering an alternative to Russia's GLONASS and the European Galileo systems, as well as America's GPS.

The first version of Beidou, meaning "Big Dipper," was decommissioned in 2012. Future plans call for a smarter, more accessible and more integrated system with Beidou at its core, to come online by 2035.

NASA's next Mars rover honors medical teams



This photo provided by NASA/JPL-Caltech in June 2020 shows a 3-by-5-inch (8-by-13-cm) aluminum plate which commemorates the impact of the COVID-19 pandemic and pays tribute to the perseverance of healthcare workers around the world, attached to the Perseverance Mars rover, in Pasadena, California. (AP)

NASA's next Mars rover is honoring all the medical workers on the front lines of the coronavirus battle around the world.

With just another month until liftoff, the space agency on Wednesday revealed a commemorative plate attached to the rover, aptly named Perseverance.

The rover team calls it the COVID-19 Perseverance plate, designed in the last couple months.

The black and white aluminum plate – 3-by-5 inches (8-by-13 cms) – shows planet Earth atop a staff entwined with a serpent, a symbol of the medical community. The path of the spacecraft also is depicted, with its origin from Cape Canaveral.

Healthcare workers were "on front lines keeping us safe" during launch preparations, said deputy project manager Matt Wallace of NASA's Jet Propulsion Laboratory in Pasadena, California.

"They really inspired us, I think, through this period, and we hope that this plate and we hope that this mission in some small way can inspire them in return," Wallace told reporters.

The rover's name, Perseverance, has taken on added meaning the last few months, according to NASA officials. It's hard enough preparing a

spacecraft for Mars, but doing it in the middle of a pandemic made it even harder, Wallace said. Additional work shifts were added to reduce the number of people working on the rover at any one time and ensure social distancing. Others had to work from home.

NASA is pressing ahead with a July 20 launch, even as the number of COVID-19 cases continue to rise in Florida. This mission – to seek signs of past microbial life on Mars and collect rock and soil samples for eventual return to Earth – is considered essential by the space agency.

If the rover isn't launched by mid-August, it would need to wait until 2022 when Earth and Mars are back in proper alignment. A two-year delay could add another \$500 million to the nearly \$3 billion mission.

Unlike for SpaceX's first astronaut launch late last month, NASA Administrator Jim Bridenstine isn't urging the public to stay home and watch online to avoid crowds.

"It appears they didn't listen to us," Bridenstine said. "So we're asking people to follow all of the necessary guidelines to keep themselves safe and we're trusting that they will." (AP)

Technology

'So secure even ministers can use it'

Coronavirus tracing app a test for privacy

BERLIN, June 18, (AP): Germany has launched a coronavirus tracing app that officials say is so secure even government ministers can use it, though developers acknowledge it isn't perfect yet.

Smartphone apps have been touted as a high-tech tool in the effort to track down potential COVID-19 infections. Experts say finding new cases quickly is key to clamping down on fresh clusters, especially as countries slowly emerge from lockdowns and try to avoid a second wave of infections and deaths.

But governments in Europe have run into legal and cultural hurdles trying to reconcile the need for effective tracing with the continent's strict data privacy standards.

Germany, where a person's right to their own data even after death is rooted in the constitution, has proved a particular challenge. Early government suggestions to use cell tower information and GPS coordinates for the app prompted a swift backlash.

"Tracking where a person is in real time, that does remind us of China and its surveillance system," said Frederick Richter, who heads the independent Foundation for Data Protection.

It also recalls Germany's own history of dictatorships. Both the Nazis and East Germany's communist regime amassed vast amounts of information to persecute dissidents and undesirables.

"That's why we have always been very sensitive in Germany when it comes to the state collecting information on its citizens," Richter said.

Like many other European tracing apps, Germany's system now relies on low-energy Bluetooth technology that's standard in modern smartphones. The app scans the user's surroundings and records which other smartphones with the app are nearby and for how long.

If someone using the "Corona-Warn-App" tests positive for COVID-19, they can inform others who were in close proximity for at least 15 minutes that they, too, might be infected.

Developers say their most recent tests correctly identified 80 percent of people's contacts. That still leaves 20 percent who were either not recognized as having been close to an infected person or deemed exposed even though they were more than 2 meters (6.6 feet) away.

"This app is no cure-all, it doesn't give you a free ride," said Germany's

health minister, Jens Spahn, noting that face masks and manual tracing will still be required. "But it's an important tool to contain the pandemic."

He acknowledged that there would likely be an increase in people seeking to get tested because of the app. "I'd rather a test too many than a test too few," said Spahn.

Concerns have also been raised about the hotline some users will need to call in order to get their positive test result recorded in the app. This opens the door to trolls who could try to trick hotline staff, setting off a cascade of consequences for everyone they were close to in restaurants, supermarkets or public transport.

Opposition parties, meanwhile, have called for a law to ensure that private businesses don't try to push customers or employees into using the app, either through incentives or sanctions.

The German government insisted Monday that "voluntary means voluntary" and the app would be continually improved.

Asked whether the app meets security standards for top-tier officials, a spokesman for the German Interior Ministry said the country's IT security agency has been involved from the start.

"I presume that from their side there can be an unreserved recommendation to members of the federal government to use this app," said the spokesman, Bjoern Gruenewaelder.

German President Frank-Walter Steinmeier and his wife Elke Buedenbender, a judge, announced they were using the app.

Die-hard skeptics are more likely to be reassured by Germany's Chaos Computer Club, which bills itself as Europe's largest hackers association. The group has a history of punching holes in government and corporate IT systems and of campaigning against surveillance technology.

Linus Neuman, a club spokesman, praised the German app developers' transparency for using the coding site Github to let the public look over their shoulder and recommend improvements.

He also suggested that choosing to store data only on people's phones, rather than on centralized servers the way France has done, would help minimize privacy risks.

"We can't guarantee that someone won't find a weak spot in (the code) tomorrow," said Neuman. "But we can say that these weak spots will have a lower overall risk than if the German government had pursued a centralized approach."

Neuman



Timotheus Hoettges, Chief Executive Officer of Germany's telecommunications giant Deutsche Telekom AG, holds a mobile phone as he attends the presentation of the new contact-tracing smartphone app that will use Bluetooth short-range radio and technology standards from Apple and Google to alert people of the risk of infection from coronavirus, in Berlin on June 16. (AP)

Anxiety found in lockdown young

ROME, June 18, (AP): A survey conducted in Italy on the psychological impact of coronavirus lockdowns on children has quantified how many parents observed during weeks cooped up at home: kids were more irritable, had trouble sleeping and for some of the youngest, wept inconsolably and regressed developmentally.

Those symptoms were more pronounced in families in which the parents were particularly stressed and in families with elderly relatives at high risk of becoming seriously ill with COVID-19, the national survey by the Giannina Gaslini Pediatric Hospital in Genoa in conjunction with the University of Genoa found.

Italy's Health Ministry on Tuesday released the results of the anonymous survey of 6,800 people who voluntarily responded to an online questionnaire March 24-April 3. The start date was two weeks into a 10-week lockdown in Italy, the first country in the West to be hit by the coronavirus pandemic.

The questionnaire on the Gaslini website asked a series of questions about how respondents and their families were experiencing the government-ordered lockdown. Gaslini didn't provide a margin of error, but hospital chief Dr Paolo Pezzaglia said the "surprising" national response indicated it was geographically representative. Of the 6,800 people who participated, 3,245 reported having children under age 18.

Among those with children under age 6, 65 percent reported their children suffered behavior problems and regression. The most common problems cited were increased irritability, sleep issues and separation anxiety. Some respondents also reported their children wept inconsolably, the researchers found.