

OUR OWN SPACE ODYSSEY

Bangabandhu Satellite-1 (BS-1) is considered as a stepping stone for Bangladesh in the digital era. With the successful launch and positioning in orbit, this is a formal journey towards the space-age for this nascent country that became independent only 47 years back. Most of you already know about the mission, the timeline and the nitty-gritty details of the satellite. So in this issue of Bytes we will try to shed some light on the underlying technology of this entire mission:

THE DELIVERY

Let's go to the basics first: a mission is divided into two parts: the payload and the delivery. The delivery is basically, how the payload is being sent to the space. Right now, there are only a handful ways to send a payload to space. Roscosmos, the Russian Space Agency and NASA, the American Space Agencies were pioneers of making the delivery but there are several other players in the market now. Since the discontinuation of Space Shuttle Program by NASA in 2011, Soyuz by Roscosmos is the only manned delivery method available to transport astronauts to the International Space Station. On behalf of Bangladesh, BRTC awarded the satellite contract to European satellite manufacturer Thales Alenia Space who out-bid Boeing, Orbital ATK, MDA Corporation and China Great Wall Industry Corporation in 2015 for a contract to construct the satellite, build ground infrastructure for the operation, training of resources and provisioning of a launch vehicle for \$248 million. The initial delivery vehicle of Bangabandhu 1 was supposed to be Arianespace's Ariane 5 rocket. But it had a long queue time and Bangladesh wanted to put up the satellite on December 16, 2017.



launch vehicle at least around 10 times with the same first stage without any refurbishment. And with refurbishments, this rocket can be reused for up to 100 more missions. This re-use concept has reduced the cost of payload delivery dramatically, saving at least \$38 million per mission.

The stage 1 vehicle comes back nearly eight minutes of the launch and landed back on earth. A drone ship of SpaceX in Atlantic called 'Of Course I Still Love You' was the landing ground of the stage 1 vehicle. Later it was returned for a detailed inspection to ensure the vehicle can enter service for future delivery.

But due to several technical delays the final launch happened on May 12, 2018 (GMT+6) from the historic Complex 39A at NASA's Kennedy Space Centre. SpaceX, a commercial space delivery startup owned by Elon Musk, using their Falcon 9 Block 5, the most high-tech rocket, embarked upon a journey that will be retold by generations to come in Bangladesh.

A bit more about the delivery vehicle, With the Block 5 Falcon 9, SpaceX wants to reuse the



THE PAYLOAD

The payload is basically the cargo that will go into space. In most cases, these are satellites, supplies for the international space station or even probes for interstellar testing. In this mission, the cargo was Bangabandhu Satellite-1 (BS-1), a geostationary communication satellite. Modelled after the new-generation Spacebus 4000B2 platform from Thales Alenia Space, the geostationary satellite comes equipped with 26 Ku-band and 14 C-band transponders. The satellite will be covering Bangladesh and its neighbouring region. Stationed at 119.1° East, the system will provide Ku-band coverage for Bangladesh and its territorial waters in the Bay of Bengal, India, Nepal, Bhutan, Sri Lanka, the Philippines and Indonesia while providing C-band support to the entire region.

WHAT PURPOSE WILL IT SERVE

The priority operation of BS-1 would be: Direct to Home (DTH) service for TV channels, VSAT, backhaul and trunking, network restoration, disaster preparedness and relief. As of now, Bangladesh rents all of these services from satellite service providers in the region. It nearly costs around \$14 million per year. Now Bangladesh can save the amount and rent out the excess capacity to the other countries in the region and earn up to \$50 million per year.



TECH HAPPENING

Samsung Galaxy S9+ offer sure cashback

Samsung is now offering cashback offer on Galaxy S9+ smartphones. Customers can now get cashback of BDT 15,000 with a chance to win up to BDT 30,000. Along with the cash back offer, by purchasing the Galaxy S9+, customers will get a wireless charger for free and the option for 24 months EMI facility. The Samsung Galaxy S9+ smartphone has brought a number of unprecedented camera features in the market. The Galaxy S9+ is available in three colours- Midnight Black, Coral Blue and Lilac Purple.

Grameenphone works to shape future of Bangladesh mobile games

Grameenphone announced recently its intent to consolidate the digital ecosystem further by introducing two exciting new mobile games - 'Battle Rage' and 'Sketch Journey' - for customers. The two new mobile games are now available on Google Play Store. "Battle Rage" promises a raw gaming experience for all. The game presents remarkably authentic characters to choose from, a supply of various weapons, multiple maps, Facebook connectivity, LAN connectivity and much more. On the other hand, "Sketch Journey" is about showcasing talent. Gamers can simultaneously sketch to collect coins while racing to the goal. Presumably simple and easy to play, this hard to master mobile game can be played online against friends.

TECNO unveils flagship smartphone duo Camon X, Camon X pro

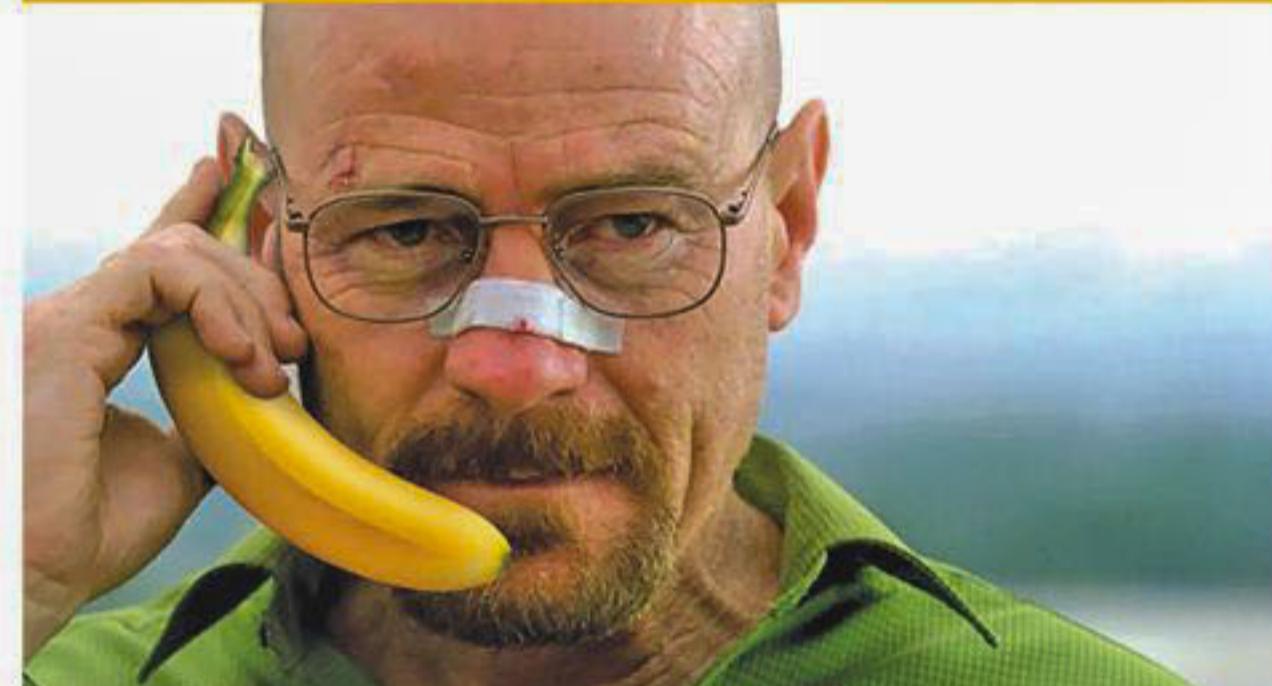
TECNO Mobile has announced the release of its latest flagship smartphone duo - the CAMON X and CAMON X Pro. The CAMON X Pro debuts 24MP + 16MP selfie and rear cameras. Also, it dons a 6-inch FHD screen with 2.5D corning glass, industry-leading 18:9 full view screen, 64GB ROM, 4GB RAM, 3750 mAh battery and superfast face recognition technology. The CAMON X and CAMON X Pro introduce a new Face ID technology that can be used to unlock the phone. Price: Tk. 22,990/- and Tk. 17,990/- for CAMON X PRO, CAMON X respectively.

Hardware industry should implement MRP policy soon

In a seminar titled 'Challenge of the computer hardware industry of Bangladesh: Recommendation for Improvement' hosted by Bangladesh Computer Council, C News and IT Business Promotion Council, the speakers spoke about the how hardware industry is booming in Bangladesh and how this is the right time to think of a MRP policy. It was attended by relevant top brasses from all the stakeholders including public private and government.

Tech Roundup : What's coming our way?

By Ehsanur Raza Ronny



Nokia 8110 is a banana

Phones have stopped being visually interesting ever since the black slab of a smartphone became the standard. Nokia disagreed. At the Mobile World Congress this year, Nokia announced it will be launching a banana phone for Asia end of this month. It is shaped like a banana, costs about \$80, features a 2.4 inch display and comes preloaded with late 90's nostalgia. You will feel like a cool character from The Matrix. **Downside:** you can't eat a banana phone.



After the S9, a lighter S8

Samsung just released the S9 and they are soon to follow up with an S8 Lite. But why? Not sure considering the regular S8 prices have dropped to half of what they were last year. The S8 Lite appears the same size and design only to have the Snapdragon 835 replaced with a Snapdragon 660 and reduced screen pixels.



A dog that won't poop

Boston Dynamics is in the news for developing robots. They currently have two in the experimental stage: Atlas the humanoid and SpotMini the yellow dog. Last week they uploaded a video showing the humanoid running around a grassy area jumping over logs and avoiding obstacles. Seems promising for a delivery service operating in Dhaka. Potholes to avoid, people to move and distances to cover quickly. Shall we call it Ruber or Rover? The SpotMini, which demonstrated the ability to open doors for you, will be available for purchase around 2019. Can your dog open doors? Didn't think so. And Spotmini won't poop on your floor.

Luke Cage does bleed, again.

Are you ready for June 22? Netflix just dropped a brand new trailer for the second season of Luke Cage, the bullet proof superhero. Will it be as epic as the first? It teases us with a new villain who is able to spit out bullets like Wolverine and make Cage bleed internally with some outrageous kung-fu.

Is the unbreakable man soon to be broken?

