NOV. 2021, EDITION 5

RCHC TECH BUZZ

A MONTHLY TECH NEWSLETTER

TAKE A PEEK AT WHAT'S INSIDE:

DECEMBER 2021, EDITION 6

WRITTEN BY RTR. ABHISHEK JAIN

This month's edition covers up the stories of Tesla Autopilot

128 Core Zen Chips

Intel's Plan on GPU

And the Microsofts antitrust equation.

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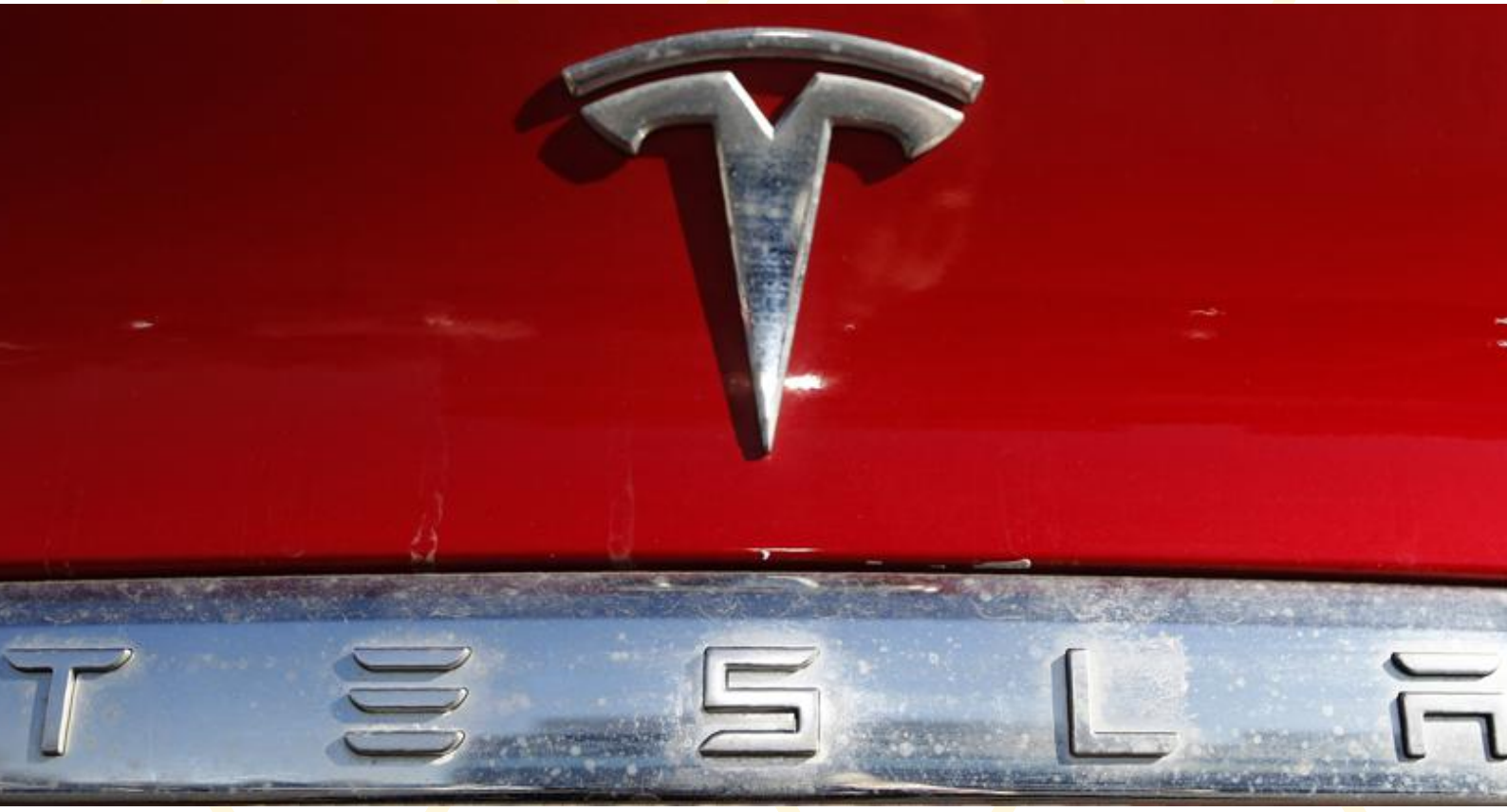

TESLA RECALLS 12,000 EVS AFFECTED BY FULL SELF-DRIVING BETA ISSUES

Tesla has recalled 11,704 of its electric cars due to problems resulting from its Full Self-Driving beta 10.3 update. The update, which rolled out on Oct. 23, led to numerous cases of its cars' forward collision warning and emergency braking feature activating without warning. It's the same update CEO Elon Musk tweeted about last month, telling owners their cars would revert back to a 10.2 update before resolving the issue.

In documents filed with the National Highway Traffic Safety Administration, Tesla said the systems activating under the wrong circumstances increases the risk of a rear-end collision. The company is not aware of any crashes or injuries related to the problem. Every Tesla model is included in this recall: the Model 3, Model Y, Model X and Model S.

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AN EPYC CORE COUNT

Since AMD's relaunch into high-performance x86 processor design, one of the fundamental targets for the company was to be a competitive force in the data center. By having a competitive product that customers could trust, the goal has always been to target what the customer wants, and subsequently grow market share and revenue. Since the launch of 3rd Generation EPYC, AMD is growing its enterprise revenue at a good pace, however questions always turn around to what the roadmap might hold.

In the past, AMD has disclosed that its 4th Generation EPYC, known as Genoa, would be coming in 2022 with Zen 4 cores built on TSMC 5nm. Today, AMD is expanding the Zen 4 family with another segment of cloud-optimized processors called Bergamo.

As part of AMD's Data Center event today, the company is showcasing that its 4th Generation EPYC roadmap will consist of two segments: Genoa, with up to 96 Zen 4 cores, and Bergamo, with up to 128 Zen 4c cores. Not only are we getting official confirmation of core counts, but AMD is disclosing that Bergamo will be using a different type of core: the Zen 4c core.

128 Cores of Processing Power in few inches of silicon chip... We are surely moving into the future era.

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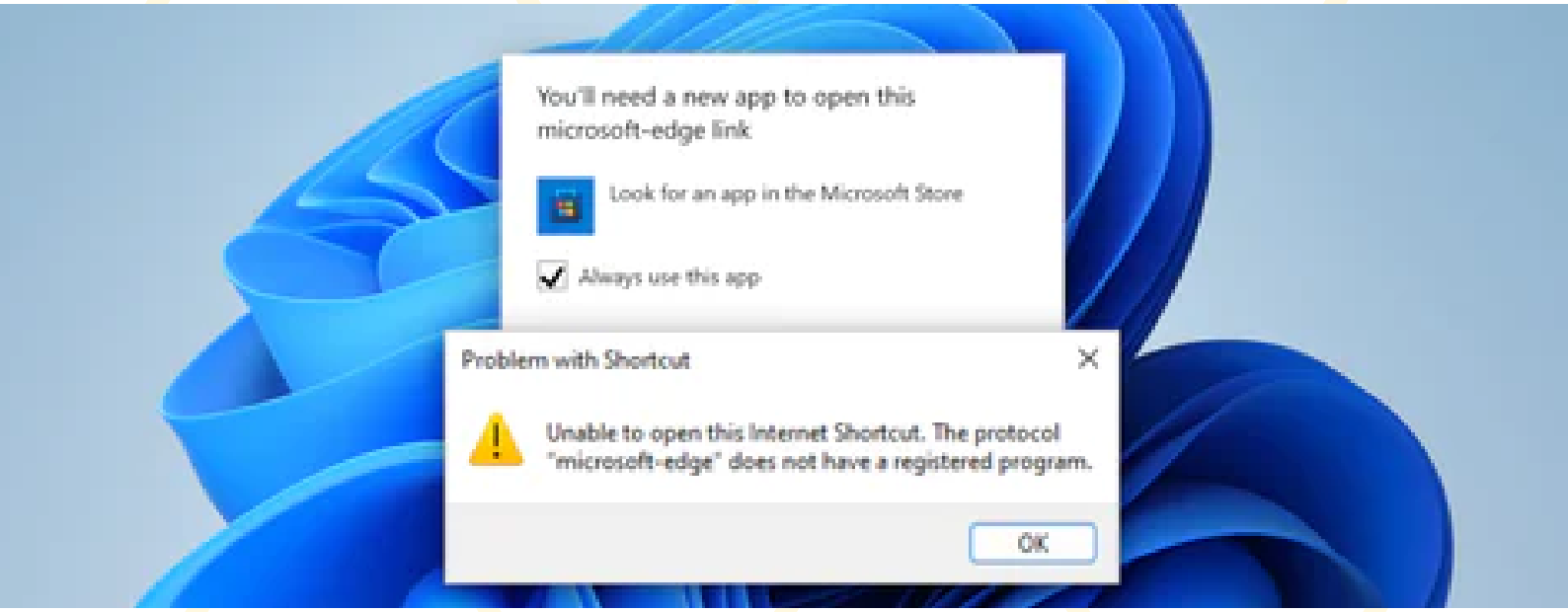

WINDOWS NOW BLOCKS EDGE BROWSER COMPETITORS FROM OPENING LINKS

Something changed between Windows 11 builds 22483 and 22494 (both Windows Insider Preview builds.) The build changelog makes a few mentions of changes to the protocol and file associations/default apps system. However, it omitted the headline news: You can no longer bypass Microsoft Edge using apps like EdgeDeflector.

EdgeDeflector is an app that intercepts microsoft-edge:// links—found throughout the Windows 10 and 11 shells and other Microsoft apps—and redirects them to regular https:// links that open in your default web browser. Microsoft uses these links instead of regular web links to force users to open them in its Microsoft Edge web browser. When opened, Edge will aggressively push the user to set it as the default web browser. Edge will even "declutter" your browser settings, as Microsoft calls it, and unpin competitors from the taskbar and replace the pinned apps with Edge.

The issue is that sooner or later browsers such as Chrome might include something similar where as Brave and Firefox have already started working on their on deflector. Now we won't even have a control over what should be our default browser.

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APPLE ANNOUNCES SELF SERVICE REPAIR

For those who have been using Apple Devices as their daily drivers knows that even a small fault in your device, either hardware or software, would force you to deal with Apple care. Apple actively stopped users from making their own repairs, until November 17.

Apple announced Self Service Repair, which will allow customers who are comfortable with completing their own repairs access to Apple genuine parts and tools. Available first for the iPhone 12 and iPhone 13 lineups, and soon to be followed by Mac computers featuring M1 chips, Self Service Repair will be available early next year in the US and expand to additional countries throughout 2022. Customers join more than 5,000 Apple Authorized Service Providers (AASPs) and 2,800 Independent Repair Providers who have access to these parts, tools, and manuals. The initial phase of the program will focus on the most commonly serviced modules, such as the iPhone display, battery, and camera. The ability for additional repairs will be available later next year.

Just to clarify Apple is not allowing Third Party Parts but will allow Third Party to use genuine Apple parts.

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OpenCL Information	
Platform Vendor	Intel(R) Corporation
Platform Name	Intel(R) OpenCL HD Graphics
Device Vendor	Intel(R) Corporation
Device Name	Intel(R) Xe Graphics
Compute Units	512
Maximum Frequency	2100 MHz
Device Memory	12.7 GB

INTEL FLAGSHIP ARC ALCHEMIST GPU HAS LACKLUSTER FIRST SHOWING IN LEAKED BENCHMARKS

Intel's upcoming Arc flagship has made its first appearance in an online benchmark database. An unnamed Intel partner took a GPU engineering sample for a whirl in the Geekbench OpenCL test suite using a slightly dated i5-9600K validation platform and here's what we learned...

In outright numbers, the GPU does poorly. The four runs achieved an average OpenCL score of about 67,000 points and its highest score was 69,000 points. For comparison, the AMD Radeon RX 6800 XT releases about a year ago sits in the 150,000 to 180,000 point ballpark.

But don't be discouraged. Consider this: according to the metadata collected by Geekbench during the runs, the GPU was hovering at around 1.3 GHz. At that frequency, with 512 EUs, the GPU has a theoretical 11 TFLOPS of performance. AMD's Radeon RX 6600 XT has similar 11 TFLOPS and scores in the 60,000 to 70,000 point range. Hence, Intel's architecture has the same per-TFLOPS performance in OpenCL as AMD's does.

So the question is: can Intel match AMD's high-end TFLOPS numbers?

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DOUBLE ASTEROID REDIRECTION TEST (DART) SPACEX LAUNCHES NASA MISSION TO SMACK AN ASTEROID

DART is a spacecraft designed to impact an asteroid as a test of technology. DART's target asteroid is NOT a threat to Earth. This asteroid system is a perfect testing ground to see if intentionally crashing a spacecraft into an asteroid is an effective way to change its course, should an Earth-threatening asteroid be discovered in the future.

The DART spacecraft lifted off from Vandenberg Space Force Base atop a SpaceX Falcon 9 rocket in a $330 million US project with echoes of the Bruce Willis movie Armageddon. If all goes well, in September 2022 it will slam head-on into Dimorphos, an asteroid 160 meters across, at 24,000 km/h.

"This isn't going to destroy the asteroid. It's just going to give it a small nudge," said mission official Nancy Chabot of Johns Hopkins Applied Physics Laboratory, which is managing the project.

The DART technique could prove useful for altering the course of an asteroid years or decades before it bears down on Earth with the potential for catastrophe. A small nudge "would add up to a big change in its future position, and then the asteroid and the Earth wouldn't be on a collision course," Chabot said.

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TEAM BLUE WILL BE PRINTING GPUS IF "ALL GOES WELL"

Intel has already confirmed the names for its next four GPU architectures. Alchemist is the first, and will be followed by Battlemage, then Celestial, and finally Druid. According to Bryce, Intel's Arc Community Advocate, we will reach 'Intel Arc Druid' series GPUs in 2025, but only if "all goes well".

Considering the first GPU series is coming next year, and Druid is scheduled for 2025, Battlemage and Celestial would have to be in between, most likely one in 2023 and the other in 2024. This implies Intel will be releasing GPUs in a yearly cadence, at least until the Druid series. Plans from that point on are anyone's guess.

For now, not much is known about the GPUs following Intel Arc Alchemist. We know Battlemage will be powered by Xe^2 HPG and Celestial by Xe^3 HPG. As for Druid, we only know it will be using Xe next architecture, which has yet to be detailed.

Team Blue (Intel) is taking its GPU Business Seriously and Team Red (AMD) and Team Green (Nvidia) Should watch out.