"Solving the data center cooling problem requires us to go back to the basics"

Serge Conesa,
*Founder CEO
and Guardian
of Immersion4*

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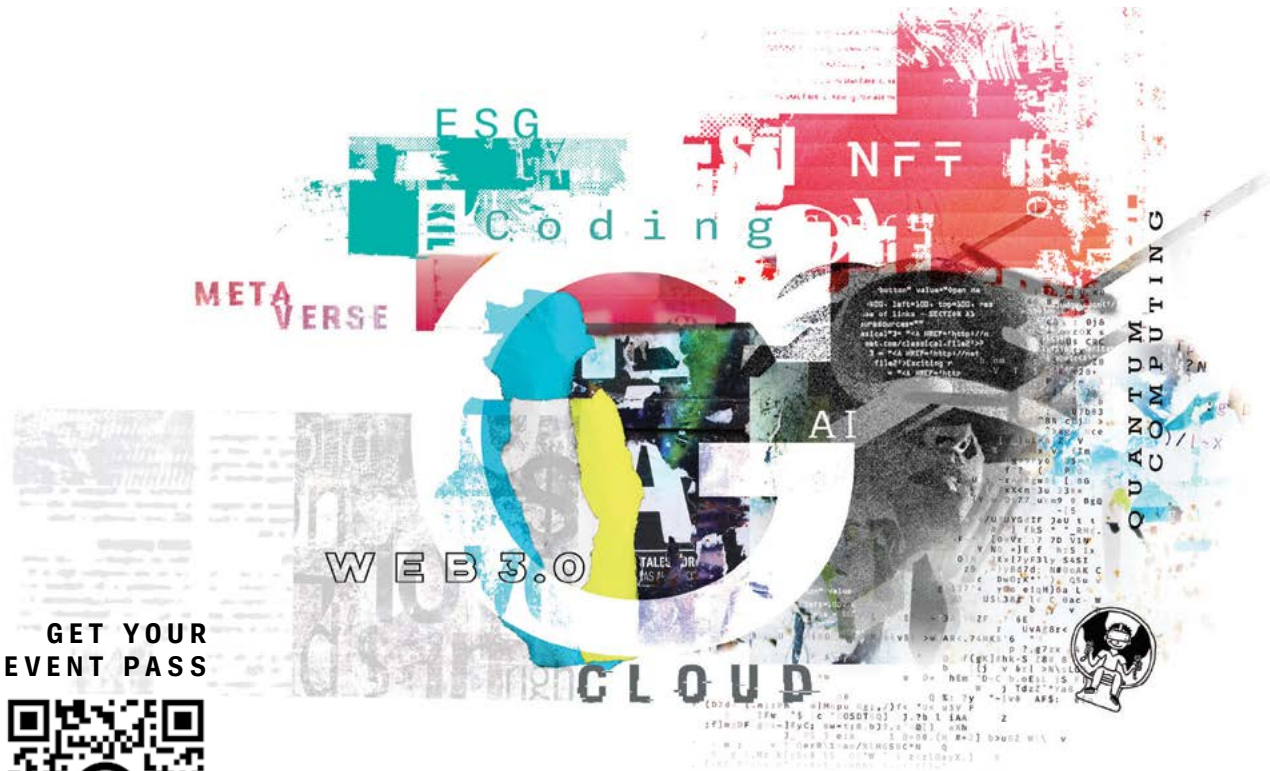
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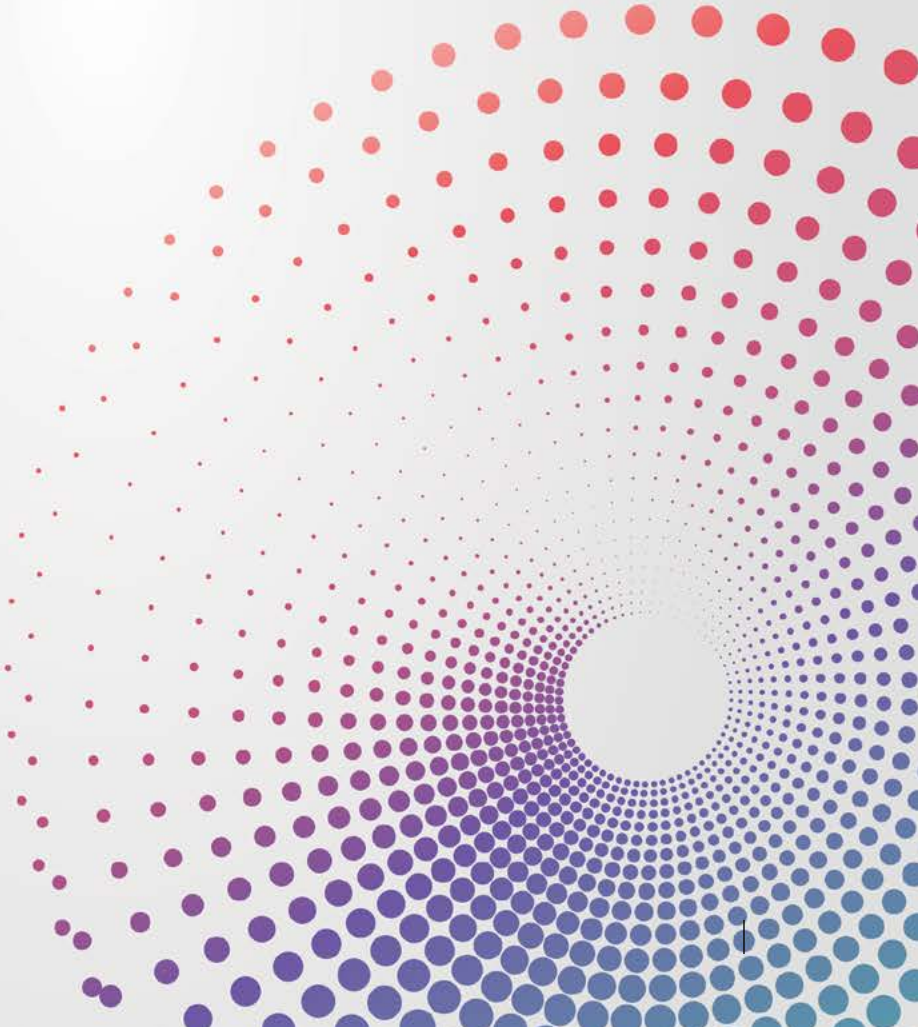Building a Fully Connected, Intelligent World

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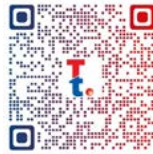Visit us at Za'abeel Hall 1, Dubai World Trade Centre
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GITEX GLOBAL   **GLOBAL DEV SLAM**   10-14 Oct 2022 Dubai World Trade Centre, Dubai, UAE. 10 Oct- 11 am to 5 pm
11-14 Oct- 10 am to 5 pm

Editor's Note

Dear Reader,

Welcome to the latest edition of Teletimes International.

The month of October brings our attention to GITEX GLOBAL 2022. Attracting more than 4,000 companies and over 100,000 attendees from 170 countries in Dubai, GITEX is definitely one of the largest tech events in the world. Teletimes has been a supporting media partner to GITEX for the past two decades and once again, we will be exhibiting at the show in our usual space in Za'abeel Hall where we are looking forward to meeting our contributors and supporters. If you would like to schedule an interview, please reach out to me at
khalidathar@teletimesinternational.com

This edition features an exclusive interview with Serge Conesa, the Founder CEO and Guardian of Immersion4, an innovative company solving the data center cooling problem through its groundbreaking technology. Serge talks at great length about the vast amount of energy being used for cooling electronics and how this goes against the very principles of sustainability. I would definitely recommend the interview, especially to our readers in the data center industry. I think Immersion4 targets key fundamentals which need to be considered - the data and ICT market is growing faster than expected and the energy we can produce is only so much - it is about time all of us start thinking "sustainability first".

As always, you will find the latest news and updates from major players across the globe. Your feedback is welcome on info@teletimesinternational.com

Enjoy Reading!

Khalid Athar
Chief Editor

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Welcome to GITEX GLOBAL

As the year started with the global tech rout, ongoing inflationary concerns and the recent rebound, yet the tech industry is teeming with great optimism and opportunities at GITEX GLOBAL, as it gets ready to kick off its record 42nd edition. From 10-14 October 2022, GITEX GLOBAL, the world's largest and most inclusive tech event shall host 4,000+ companies and 100,000+ attendees from 170 countries in Dubai.

GITEX GLOBAL 2022 congregates the full ecosystem of stakeholders playing a major role in the vibrant global digital economy as 7 communities come together for the first time in a major event: big tech, startups, governments, investors, coders & developers, academia and youth. In line with the region's strategic digital growth sectors – GITEX GLOBAL is a tech collective of several shows curated under distinct tech sectors including: Ai EVERYTHING representing the most transformational innovation agenda in partnership with the UAE Office of AI, NORTH STAR (startups), FUTURE BLOCKCHAIN SUMMIT in association with VARA - the Virtual Assets Regulatory Authority, FINTECH SURGE and MARKETING MANIA.

GITEX GLOBAL is the only event to feature the largest government tech showcase and private-public partnerships through 230+ participating entities.

As the custodian of the region's technology agenda, GITEX GLOBAL conferences are highly sought after for the evolved thinking and insights shared by over 1,000 formidable minds from 70+ countries on stage. This year the conference will for the first time welcome major heads of global corporations on the Main Stage, where the leaders will deliver hard-hitting talks on the most transformative trends and changing business priorities post-tech-shakeout. Multiple stages host 14 conference tracks covering pivotal turning points across: Future Mobility, Cybersecurity, Digital Cities x AI, 6G/Telecom, Healthcare, Data Economy, Web 3.0, Education, Energy, Coding, Startups, Fintech, Blockchain & MarTech.

From the year's most promising startups and top-ranked investors networking at NORTH STAR to the new crypto and blockchain crusaders gathering in FUTURE BLOCKCHAIN SUMMIT x VARA, GITEX GLOBAL is the most awaited global networking and alliance forging super-connector event of the year.

Committed in its mission to create a most empowering microcosm in the UAE for the world's talented coders and developers, GITEX GLOBAL 2022 launches Global DevSlam. The event will feature the creative ingenuity behind some of the industry's

breakthrough technologies with top international coders from tech behemoths like Anaconda, AWS, Google, Instagram, IBM, Microsoft, and many more joining the program. The event will connect coders to global learnings, innovative projects, youth workshops, and a flourishing wave of career opportunities through DevSlam Talent. The event also welcomes the worldwide python community with the launch of the PyCon MEA edition – featuring a lineup of renowned Python masters coming together for the first time in the region at Global DevSlam.

The creation of X-VERSE, another experiential highlight of GITEX GLOBAL in partnership with multiple tech elites, draws our audience into the foray of the much-hyped Web 3.0 and Metaverse economy. As the Dubai Metaverse Strategy targets to add $4 billion to the Emirate's economy and to support 42,000 virtual jobs by 2030, the three-dimensional, hyper-realistic X-VERSE hosts 25 globally and regionally recognized industry applications of Metaverse covering Manufacturing, Gaming, Education, Healthcare, Retail and Future of Work.

GITEX GLOBAL is organized by Dubai World Trade Centre – a leading entity behind some of the world's largest events aligning trade, government and social objectives for collective progress.∎

GITEX GLOBAL 2022 takes over Dubai with record capacity, accelerating world's digital economy

42nd edition now the world's largest tech and start-up show, hosting unrivalled growth in 26 halls, selling out three new halls across multi sector tech wonders

The global digital economy is in full velocity mode, embracing the return of the world's largest, most inclusive tech and start-up event, which opens this month in Dubai with unrivalled record capacity, its continued expansion fuelling the installation of three additional sold-out halls at the Dubai World Trade Centre.

GITEX GLOBAL 2022 will take place from 10-14 October, outperforming its previous edition as it prepares to host more than 4,500 companies and over 100,000 attendees from 170 countries, spanning 26 halls and two million sq. ft, matching the scale of 33 football fields.

The remarkable growth of the annual five-day event is spurred by ebullient market demand across all industry sectors, with no less than 1,400 new exhibitors among the global line-up of companies and start-ups showcasing ground-breaking applications in the metaverse, AI, Web 3.0, blockchain, 6G, cloud computing , fintech, and big data.

With the participation of more than 250 government entities leading strategic digital projects and public-private partnerships, and 800-plus start-ups seeking their next big break in North Star Dubai, the GITEX 3.0 edition will unite the world's most influential ecosystems advancing business, economy, society and culture.

"As the curious audience attempts to make sense of the real versus virtual world we are creating, GITEX GLOBAL takes the helm in partnering with global tech leaders to empower, enlighten and enthuse everyone on the metamorphosis of the digital economy," said Trixie LohMirmand, Executive Vice President of Events Management at Dubai World Trade Centre, GITEX GLOBAL's organizer.

"GITEX GLOBAL will cut through the hype and emotions, gathering the best minds in all businesses around the world to debate, challenge and rationalise the impact of this tech fusion on society and our future. This is GITEX 3.0."

GITEX 3.0 series includes launches of Global DevSlam and X-VERSE

With a fully immersive deep dive into the digital universe, GITEX GLOBAL presents its 3.0 edition with Ai Everything, North Star Dubai (formerly GITEX Future Stars), Fintech Surge, Future Blockchain Summit, and Marketing Mania.

Two new events will also be launched this year, selling out to a global audience within two months: Global DevSlam, and X-VERSE.

Committed to creating a thriving home in the UAE for international coders and developers and advancing the digital economy, Global DevSlam is the Middle East's largest ever coder and developer

meetup, connecting 10,000 coders alongside developers from the world's biggest tech companies, including Anaconda, AWS, Google, Instagram, Microsoft, Oracle and Red Hat.

The fully subscribed event is supported by Coders (HQ) and inspired by the UAE's mission of building the world's best coder and developer ecosystem, with the country now offering its long-term residency Golden Visa to 100,000 qualified coders from around the world.

Global DevSlam also welcomes the worldwide python community with the launch of Pycon MEA, featuring a line-up of renowned Python masters coming together for the first time in the region.

Setting another first, X-VERSE, in partnership with Decentraland, curates one of the world's most immersive metaverse journeys, providing a never before seen experience into the greatest shifts and the most potentially disruptive industry applications of the metaverse. **T**

Interview: Khalid Athar

Immersion4 DTM™ and IBCMiners™ systems allow 1 year ROI with up to 90% TCO. This is a true response to industry needs and ensures the migration to a sustainable data world where energy and infrastructure are used almost exclusively to power the IT load instead of a cooling system.

"Solving the data center cooling problem requires us to go back to the basics"

Serge Conesa, *Founder CEO and Guardian of Immersion4 speaks with Teletimes in an exclusive interview*

Khalid Athar: How has the year 2022 been so far for Immersion4?

Serge Conesa: The year 2022 has been very promising for Immersion4 since the beginning as we are now present on

all continents. The market has severely increased due to the cost of electricity and the impact on natural resources making this a top priority for decision-makers. Natural resources getting compromised with a direct effect on our lifestyle are

driving data center sustainability and cost reduction measures, calling for significant technology transitions. The global need to move to Net Zero by 2030 is high - using less water, power, and land, and reusing heat in the data center are top priorities but

the adoption is still slow due in comparison to the urgency of the global situation. We all need to move to solutions that are applicable now and not in 2030 or 2050. This is what Immersion4 brings to the market.

We are now witnessing what we have been talking about for years in many international events. There is no more time to waste in discussions, it is time to act otherwise we are part of the problem, not the solution!

KA: Will you be attending GITEX this year? How do you see the UAE market?

SC: We will be present at GITEX with some executive and shareholder members for high-level meetings. We regularly participate in international events like GITEX, Mobile World Congress, Vivatech with HPE (our international partner) to focus on international deployments of our solutions. The Middle East and Africa are very important markets for Immersion4 and UAE is of high strategic importance for us. In that regard, Immersion4 is opening its UAE office to address the local market establishing that office as the HQ for Middle East and Africa. We will be making many announcements during the last quarter of 2022 anticipating a strong presence and activity in 2023 especially in the UAE and nearby region.

KA: Would you like to talk a little bit about the problem of extreme energy consumption in the ICT space? How do you see the fact that the data we are storing may or may not be valuable but the energy used to store any data is extremely valuable - yet we continue down the same path?

SC: You are absolutely correct in saying that data may or may not have value but energy has one. I will add to your comment that "Data is Energy" and data should be considered "energy" as without energy there is no data. To be able to achieve and store the massive data production forecasted at around 175 Zettabytes in 2025, we must go back to the electronic

fundamentals as data center technology is all about cooling electronics. Electronic optimization must be the first thing that is addressed so any initiative such as algorithms optimization, virtual machine architecture implementation, and application software optimization without that prerequisite cannot be truly efficient.

We are entering an era where data can be considered as the 8th natural resource, and

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"Often in my presentations, I'm asking if it makes sense to cool an entire room just to cool a glass of whisky"

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today data centers consume almost 15% of the world's electricity. Data production implies heat generation. This is where all the Physics laws converge together defining the exchange rules. With the coming end of Moore's law, new chips will need higher clock speeds to cope with performance demand. Even today's 4nm bitcoin ASICS require a lot of power capacity and dissipate a tremendous amount of heat ($500W+/cm2$). The ability to remove high-density heat production, while reducing the

electricity used to do this, is the key to performance for various chip industries.

It is obvious that we cannot continue down the same path.

In 2017, we saw exponential growth in data and a data center market explosion led by factories of the digital world (from EDGE to Hyperscale). Sadly, what we forecasted as worst-case scenarios are becoming reality with a direct impact on our quality of life. We came from 5% of the world's electricity consumption, 3% of the GHG, and 926 billion liters of water in the US to 20% of the world's energy, 10% of the GHG and more than 3 trillion liters of water. As an example, Microsoft's giant data center complex in North Holland consumed 84 million liters (84,000 cubic meters) of water in 2021, a year when heat caused severe water shortages. (Drought-stricken Holland discovers Microsoft data center slurped 84m liters of drinking water last year - DCD (datacenterdynamics.com)

KA: What is the key problem in our current approach towards data center cooling?

SC: Cooling electronics using an insulator (air) instead of a thermal conductor (liquid) does not make a lot of sense. Trying to reuse the heat dissipated by the IT load through air/liquid is also not efficient and requires huge investment. Often in my presentations, I'm asking if it makes sense to cool an entire room just to cool a glass of whisky. I can see most people smiling. Well, this is what today's

This data centre takes wasted digital energy and converts it into a renewable energy source

aiforgood.itu.int

As a systemic approach, it is key to take into consideration the whole "Heat chain" to:

• Reduce the temperature gradient from the CHIP across the PCB to limit the fatigue related issues thus reducing the life span and improving reliability.

• Increase recycle-ability.

• Effectively reduce energy consumption.

Immersion cooling is now inevitable and the new way to cool chips past 500W using warm facility water (25C+) inlet temperatures.

KA: How does Immersion4 approach data center cooling?

SC: The Immersion4 mission is to cool electronics using our liquid called ICE™ Coolant while using our open systems welcoming any type / any format / any brands. In term of efficiency, there is nothing better than collecting and recycling the digital heat through a "Liquid to Liquid"™ thermal design. Immersion4 DTM™ technology is based on 4 pillars and 4 principles that answer positively the COP26 requirement since 2018. I always have been convinced that the biggest source of energy we have on earth is what I called "Eco-conservation". As a matter of fact, we have estimated that if all datacenter's in the world today will be using Immersion4 technology they will

data center technology is about.

We are continuing on "ADDING" and "EXPANDING" this technology with more complicated infrastructure at every level instead of "SIMPLIFIYING" while delivering the same or higher DATA services with respect to Energy consumption and infrastructure.

It is imperative that we change the way we cool electronics which has a lot to do with the way we build data centers. Like any other technology, using the same principles, it just had complexity starting from the IT load supply chain vendors. Cheap liquid technologies don't solve the data center infrastructure complexity and cost. We need solutions with impact in terms of Backup system and UPS reduction, pollution emission, reduction in density and floor space, preservation of natural resources, saving energy and reduction (elimination) of E-waste.

Electronics don't need air or water to be cooled. In fact, this is where the problem

resides, creating many direct and indirect implications such as data center urban integration and costly data center air cooled infrastructure which directly impact ROI and TCO.

The good news is that emerging technologies using immersive cooling are all going one step forward to FULL IMMERSIVE cooling systems.

Serge Conesa, Founder CEO and Guardian of Immersion4 is receiving the Award for the Most Innovative Company at the Burj CEO Awards held in Dubai.

just consume 4% of the world's electricity instead of 20% forecasted for 2025. This represents the electricity produced by 1500 nuclear plants at 1Gw.

Today Immersion4 is 100% SDG, ESG and sharia laws compliant. Our Industrial business model called I4IBM™ (based on circular economy) shares the value chain enhancing community quality of life. Immersion4 DTM™ and IBCMiners™ systems allow 1 year ROI with up to 90% TCO. This is a true response to industry needs and ensures the migration to a sustainable data world where energy and infrastructure are used almost exclusively to power the IT load instead of a cooling system.

I would like to add that Immersion4 DTM™ systems don't emit any GHG or Co2 nor consume any water.

In today's world, we must build an eco-conservation society and the recycling of what we are producing is mandatory. The planet doesn't buffer our lifestyle anymore. It is now becoming a question of survival.

KA: Would you like to share some information around industry recognition of Immersion4?

SC: Immersion4 is proud to have received a lot of recognition. Some of the notable

items include:

2018 Geneva International invention show (4 prizes).

2019 ITU Best use of ICT and Global Excellence Award.

ITU sustainability company since 2019.

2020 Solar impulse labelled.

DTM™ systems have been engineered based on "Building Block Architecture" with ZERO bottlenecks.

2021 Forrester sustainability report magic quadrant upper right.

Lately, Immersion4 was the keynote speaker at the ITU "AI for good". We got a lot of traction and interest from various people across different industries. Energy consumption, sustainable data and AI are completely intertwined focusing on the same issue, and are on the top agendas for everyone at this point.

KA: What options are available to decision makers?

SC: There are solutions readily available and it is up to any decision maker to use them.

We could use the model below illustrating the "efficiency chain"

It could be translated in 2 main categories (IT Load and Cooling infrastructure) as per the figure below
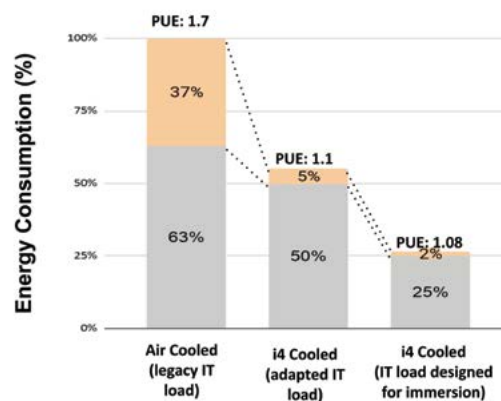
While allowing URBAN mining (E-Waste & e-Waste reduction), Immersion4 DTM technology will drastically reduce energy consumption OPEX optimizing PUE

✓ IT LOAD - Up to 2.5x
✓ Cooling Infrastructure – Up to 18.5x

At this stage, this is more than a social responsibility matter but I infact look at it as a "parenthood" matter that each of us must be aware of. We have to think about what we are leaving behind.

Decision makers need to look at the basics and fundamentals – because if they were right, we would not be in this problem to begin with. Datacenter operators are paid based on data resilience and availability not based on the energy they are saving. It is time to change this outdated model.

Another problem critical to be addressed is E-waste as it is a direct threat to 13M kids' and 18M women's (WHO numbers) lives and indirectly to all of us. Data produced by electronic is being cooled by air making their recyclability questionable. This is another problem that Immersion4 is addressing. PCB's for their protection have conventional coating and brominated chemical layers which are highly toxic when they are shipped by containers in 3rd world countries to be "recycled" by fire. Combustion from burning of e-waste creates fine particulate matter, which is linked to pulmonary and cardiovascular transgenerational diseases.

KA: What is the importance of design and architecture when it comes to data storage environments?

SC: Speaking about Immersive cooling solution we need to consider 2 IT Load

environments which are completely intertwined: The legacy one which will require to be adapted to become "Immersive" cooling compatible and the

---

Immersion4 DTM™ systems don't emit any GHG or C02 nor consume any water.

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one which doesn't need any modifications. From those 2 categories several sub categories have to be created depending on the type of immersive cooling solution being used. Immersion4 has solved all

current problems by creating 3 product families called AIO "All In One" and DC "Datacenter". DTM™ systems have been engineered based on "Building Block Architecture" with ZERO bottleneck welcoming any accessories (PDU, patch panel, router, switches), any servers, any size, any brand, any type, any format, any type of connectivity (electrical, data, fiber optics of any speed) no matter the datacenter type private, hybrid, public from EDGE to Hyperscale.

Using Immersion4 solution allows any building to become a datacenter.

KA: How is Immersion4 different from other immersion cooling solutions?

SC: There are many differences from the company structure to its product Series and architectures.

•Immersion4 mission and addressable markets - Immersion4 mission is two-fold. First to address all market segments from SME's to fortune 500 including civilian and government. Through circular economy, to help any nations which is having a true sustainable agenda. In that regards we have created our own recyclable product lines and biodegradable liquids. Our go to market called I4IBM™ "Immersion4 Industrial Business model" creates partnership with countries allowing our systems to be produced locally as well as

Figure showing a 270m2 datacenter equipped with DTM 20U DC Series

creating R&D Labs in partnership with local universities.

•Product ranges - Immersion4 has 2 Series of products called AIO "All In One" and DC "Datacenter". They all use the same architectures outside of the fact that one has an integrated cooling module and the other does not. Otherwise, everything is common allowing the Immersion4 customer to operate any of our products as soon as he engages with one.

•Business model – It is "Pay as you Grow" based. DTM™ and IBCMiners™ systems can be added in any datacenter without any bottleneck expanding with the customer needs.

•IT Load simplification – Immersion4 "FULL IMMERSION" is a clear choice in this aspect and our DTM systems have no servicing issues as well. This is why the customer IT Load can be serviced like an "AIR-Cooled" rack making things much easier and simpler."

KA: Which markets are early adopters for your solution? Do you have some data around market success that you can share with us?

SC: At first, everything started in France where our original R&D lab "CoolLabs" is located. Lately, due to the price of energy and because Immersion4 positively addresses the concern of every nation (which is data and energy sovereignty), we are getting traction from all over the world. Q4 2022 and early 2023 will see major progress in the Middle East and Africa and that is the reason why we are building our local presence here.

KA: What will be your key focus for the remainder of this year and what do you expect from the industry in the next 18 months?

SC: We are starting active deployment in UAE and in the Middle East in general with well-known customers. We are hoping the industry will soon realize how we help avoid complexity and cost just by being back to the fundamentals. Immersion4 Open Architecture integrates any type of IT load

"Simplicity is the ultimate sophistication."
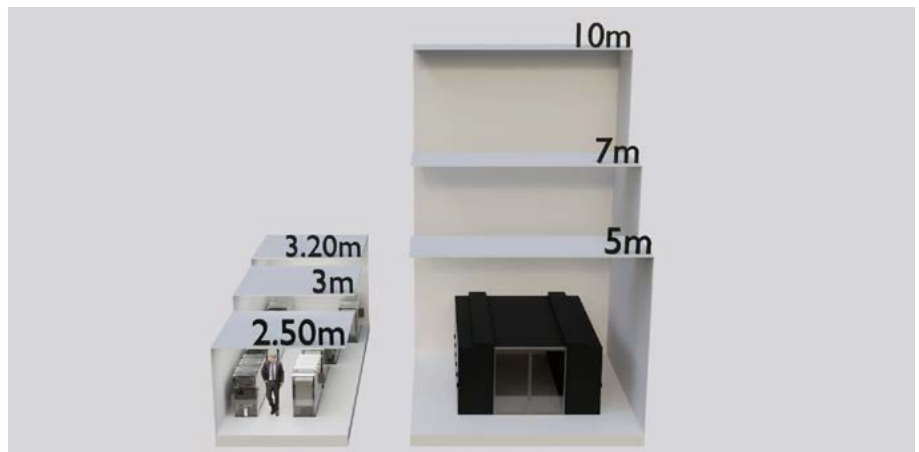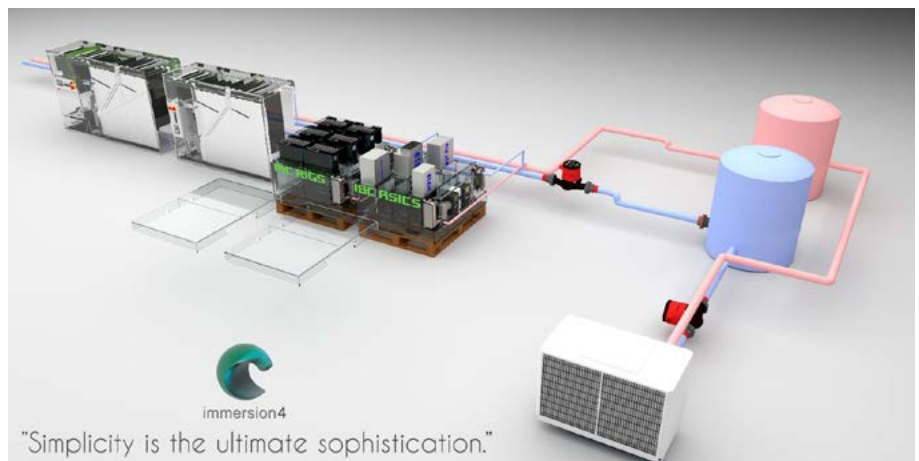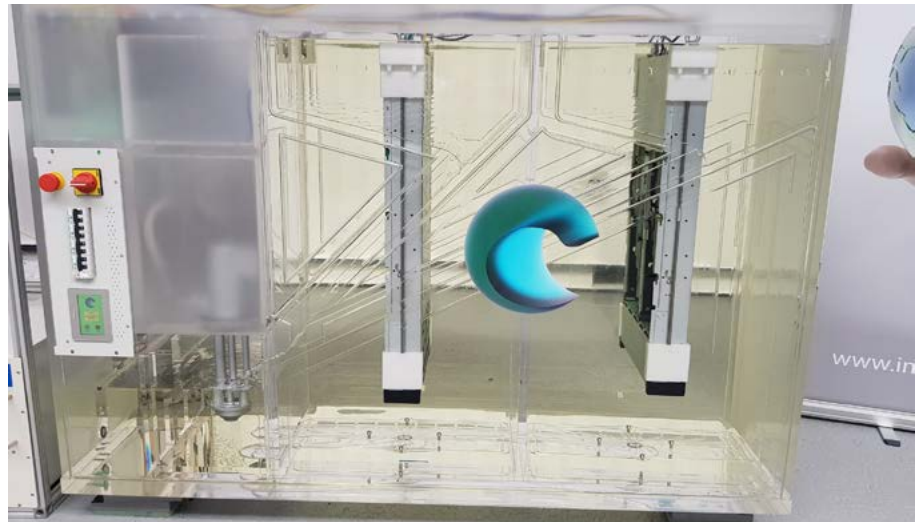
and will become a true problem solver for the all types of stakeholders. The future outlook is very promising and we remain motivated to play our role in making the world a better place.

A regulatory framework will be required to

support more sustainable and responsible stages of open and closed reverse supply chains in the electronics sector but it's NOT what will make the change. The change will come from the consciousness of each of us and our awareness of what we leave behind for future generations. ◾

IN 2021*, ONLY 17% OF ELECTRONICS IS RECYCLED.

18 MILLION CHILDREN, 13 MILLION WOMEN ARE PART OF DIGITAL DUMPSITES.

*Source : WHO- World Health Organisation
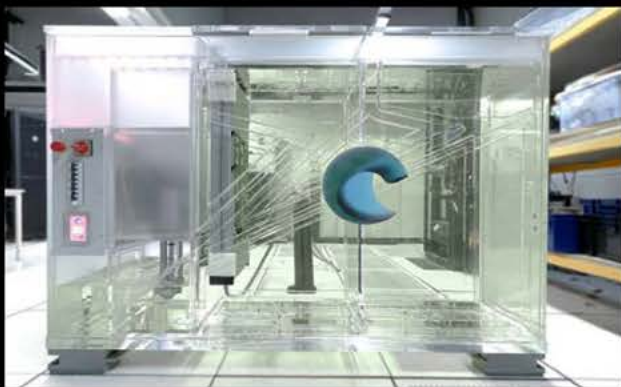
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Doreen Bogdan-Martin elected as new ITU Secretary-General

She will be the first woman to lead the ITU in its 157-year history

Member States elect Tomas Lamanauskas as next Deputy Secretary-General

Member States of the International Telecommunication Union (ITU) have elected Doreen Bogdan-Martin of the United States of America as the organization's next Secretary-General.

Bogdan-Martin will be the first woman to lead ITU, which was established in 1865 and became a United Nations specialized agency in 1947.

The election took place during ITU's Plenipotentiary Conference (PP-22) in Bucharest, Romania with representatives of Member States voting during the meeting's morning session. Bogdan-Martin won the position with 139 votes, out of 172 votes cast.

"Whether it's today's children or our children's children, we need to provide them with a strong and stable foundation for growth," Bogdan-Martin said. "The world is facing significant challenges – escalating conflicts, a climate crisis, food security, gender inequalities, and 2.7 billion people with no access to the Internet. I believe we, the ITU and our members, have an opportunity to make a transformational contribution. Continuous innovation can and will be a key enabler to facilitate resolution of many of these issues."

Bogdan-Martin has held leadership positions in international telecommunications policy for over two decades. Throughout her career, she has brokered innovative and visionary partnerships with the private sector, civil society, and other United Nations agencies to accelerate digital inclusion and connectivity.

Doreen Bogdan-Martin
Secretary-General, ITU, Elect

Bogdan-Martin will begin her four-year term as ITU Secretary-General on 1 January 2023.

The Secretary-General-elect has pledged "to continue driving this institution to be innovative and increasingly relevant for our Member States, better positioning all of us to embrace the digital environment and make progress on achieving UN Sustainable Development Goals and connecting the unconnected."

Inclusive digital development

Bogdan-Martin was endorsed by her country's government as a candidate to make the digital future inclusive and accessible for everyone, especially in developing countries.

US President Joe Biden, in a 20 September statement backing her candidacy, said: "Ms. Bogdan-Martin possesses the integrity, experience, and vision necessary to transform the digital landscape."

Tomas Lamanauskas
Deputy Secretary-General, ITU, Elect

As chief architect of ITU's development work in recent years, Bogdan-Martin has emphasized the need for digital transformation to achieve economic prosperity, job creation, skills development, gender equality, and socio-economic inclusion, as well as to build circular economies, reduce climate impact, and save lives. Her current term as Director of ITU's Telecommunication Development Bureau ends on 31 December 2022.

Among her campaign priorities, she said she would "lead ITU into a new era of global and regional partnerships," adding that the organization "must evolve and sometimes break from old ways" to stay relevant.

Electing ITU's other top leaders

At the ITU Plenipotentiary Conference, Member States will also elect candidates to the posts of Deputy Secretary-General, Radiocommunication Bureau Director, Telecommunication Standardization

Bureau Director, and Telecommunication Development Bureau Director.

The voting for ITU's senior leadership will be followed by elections for the 12-member Radio Regulations Board and for regionally allocated Member State places on the 48-seat ITU Council, which governs ITU between quadrennial Plenipotentiary Conferences.

Member States has elected Tomas Lamanauskas of Lithuania as the next Deputy Secretary-General of the International Telecommunication Union (ITU), the United Nations specialized agency for information and communication technologies.

The election, completed in one round, took place at the ITU Plenipotentiary Conference (PP-22) currently underway in Bucharest, Romania.

In this key executive role, Lamanauskas will assist ITU's next Secretary-General, Doreen Bogdan-Martin (U.S.), who was elected separately earlier in the day.

Lamanauskas has pledged to foster broad partnerships for connectivity; to increase ITU and industry ambitions on net-zero emissions and climate sustainability; and to integrate results-based management into all ITU processes.

The Deputy Secretary-General, like ITU's other four elected officials, will serve a four-year term starting 1 January 2023.

Lamanauskas works in the private sector and previously headed ITU's Corporate Strategy Division. ∎

ITU and UAE sign host country agreement for 2023 World Radiocommunication Conference in Dubai

The International Telecommunication Union (ITU) and the United Arab Emirates (UAE) have signed an agreement for the hosting of the next World Radiocommunication Conference (WRC-23) to be held at the Dubai World Trade Centre, Dubai between 20 November and 15 December 2023.

The WRC-23 host country agreement was signed in Bucharest, Romania, at the ITU Plenipotentiary Conference (PP-22).

Held every four years for a period of four weeks, the World Radiocommunication Conference (WRC) is mandated to update the Radio Regulations, the sole international treaty governing the use of the radio frequency spectrum and the geostationary and non-geostationary satellite orbits.

"As the world works towards achieving the 2030 Agenda for Sustainable Development, collaboration, cooperation, and consensus building are more critical than ever to enable all countries and their citizens to have access to affordable and sustainable digital technologies and services," said ITU Secretary-General Houlin Zhao. "I would like to sincerely thank the United Arab Emirates and the city of Dubai for agreeing to host the next

Engineer Majed Sultan Al Mesmar
Director General, UAE (TDRA)

World Radiocommunication Conference."

WRC-23 will bring national government authorities and telecommunication regulatory agencies together with representatives of key radiocommunications users and providers to consider crucial policy and technical regulatory discussions at the global level.

Engineer Majed Sultan Al Mesmar, Director General of the UAE Telecommunications and Digital Government Regulatory Authority (TDRA), said: "We are eager to host the WRC-23 and we are determined to make it a success story to be added to the many

milestones in our fruitful relationship with the ITU. By hosting WRC-23, the UAE would be the only country that has chaired and hosted all the ITU-affiliated conferences. We welcome all the participating countries, and we wish them a pleasant stay in the UAE, and we hope that all the desired results of this conference will be achieved, on the way to promoting digital transformation and increasing communication between parts of the world in a way that contributes to achieving sustainable development."

International cooperation throughout the four-year conference cycle supports the availability of radiocommunication services that are free of harmful interference, as well as future investment in these essential resources.

"WRC-23 will provide ITU Member States the opportunity to update the Radio Regulations which play a key role in shaping the future of technical and regulatory frameworks necessary to provide a solid foundation for the further advancement of innovative and affordable technologies that define how we work, do business, communicate, acquire knowledge, access vital services and much more," said Mario Maniewicz, Director of the ITU Radiocommunication Bureau. ∎

"Adapting to the transformation in the telecom sector means a fundamental change in BSS systems"

Natalia Komleva - *CEO, Nexign*

Gulraiz Khalid: Nexign is celebrating its 30th anniversary this year. What changes has the company undergone during this time?

Natalia Komleva: Like many other companies, Nexign is undergoing a major transformation as we are modernizing our business models and customer interactions. For 30 years, the telecom and ICT markets and our clients have changed a lot. We understand this fact very well, and we know that our clients value continuous progress, the ability to take advantage of new technologies, and the ability to adapt to dynamic market shifts.

Our story began in 1992 when we were a small team of people sharing the same vision who developed billing systems. In 30 years, we have become an international company, a major provider of digital solutions for telecom operators. We have implemented more than 120 projects worldwide, and our team has grown up to its current 1,800 employees. We are also very proud that we have managed to maintain continuous operation and strong financial performance even through

challenges related to implementing and adapting to change.

GK: How has the year 2022 been so far from a corporate point of view?

NK: This year, we have focused on addressing our clients' new business goals and creating services to expand their capabilities. Our work has included

> *"We have recently developed and presented a new solution called Nexign Revenue Management for harmonizing diverse revenue streams on a single convergent platform".*

developing new products to improve the operational efficiency of telecom operators, reduce their expenditures, and offer advanced monetization capabilities for different assets, including 5G projects. We have also continued to optimize our product portfolio and strengthen the reliability of our solutions by using microservices and open digital architecture.

GK: Would you like to comment a little bit on the BSS industry at the moment?

NK: The industry, as a whole, faces tough challenges; telecom operators want to stand out as more than just connectivity players. They are providing more non-core digital services while chasing new revenue streams and exploring cross-industry partnerships. Adapting to this transformation means a fundamental change in BSS systems. It becomes essential to maintain a high rate of innovation, promote multi-access edge computing, and monetize every ecosystem-enabled solution.

Moreover, with regards to digital transformation, it was often implemented only at the upper levels with a focus on

customer experience. And we see that it is time to take it deeper into the core of the systems since further progress is only possible with a holistic approach and change at all levels.

GK: How will this evolution beyond connectivity impact revenues?

NK: When operators are expanding their lines of business and creating a next-generation experience, they unlock new revenue opportunities. However, the speed of transformation and introduction of new monetization models is rapidly increasing, and it is no surprise that some are left with dozens of siloed systems that become a burden.

To address this issue we have recently developed and introduced a new solution called Nexign Revenue Management for harmonizing diverse revenue streams on a single convergent platform. It helps manage the entire revenue generation process across all business verticals and provides advanced 5G network monetization opportunities. The solution natively supports the convergence of B2B and B2C business lines, prepaid and postpaid payment models, fixed-line, broadband, and mobile networks, and easily integrates with any digital layer and other systems in the operator's BSS landscape.

GK: How do you see your role in the Middle East telecom and ICT market? Are you planning to introduce this solution in the region?

NK: The Middle East is a special region for us, as we believe we can add value here. We have the company's MEA headquarters in Dubai and are always looking for new ways to expand our local capacities. We are

> **"We have been developing new products to improve the operational efficiency of telecom operators, reduce their expenditures, and offer advanced monetization capabilities for different assets, including 5G projects".**

> **"Nexign is about empowering customers to modernize their BSS systems, adapt networks to the 5G era, and build next-generation convergent digital ecosystems".**

already working with some of the leading telecom players in the region and have established strong partnerships with them. So, we are familiar with their business goals and aspirations and strongly believe that Nexign Revenue Management will be a much-needed solution for our local partners looking for a modern, scalable and flexible monetization system. Additionally, the solution ensures multidimensional convergence and operational flexibility not limited by vendor or technology, which is also a rising trend in the market.

GK: Could you give us insight on your latest key projects?

NK: Our latest success story is deploying Nexign's Neon Intranet Platform at MegaFon. The operator was looking for a secure, flexible, and scalable platform that could support the company's unique employee development program, be easily adapted, and be configured in accordance with new tasks. Ultimately, the company chose our proprietary solution that not

only allowed for creating a digital space to bring together about 30,000 employees but also reduced costs and sped up the overall functionality by 30%, as compared to the previous system.

Recently we also worked with Zain Kuwait on increasing the effectiveness of sales and marketing initiatives. Together we implemented the Marketing Campaign Management System, a BI-integrated solution for diversified campaign management. It enabled the operator to make targeted offerings to diverse groups of clients, increase response rates, and boost customer satisfaction, loyalty, and retention.

GK: What will be your key focus for the remainder of 2022 and in the near-term future?

NK: We believe that our goal is empowering clients to modernize their BSS systems, adapt networks to the 5G era, and build next-generation convergent digital ecosystems. In our opinion, these are the three pillars essential for growth in a modern, highly competitive market. Therefore, we will continue to deliver successful project transformations while creating and deploying cloud-native, future-proof, modular, and scalable products to increase CSPs' agility and operational efficiency. ▪

How spectrum allocation will shape the region's Digital Economy

Dr. Abdulhadi Mahmoud AbouAlmal, Director, Tech Standards & Spectrum Management, Etisalat

The mobile industry is the engine for national digital transformation and the foundation for the digital economy that will shape our economy and society in unprecedented ways in the next decade. PWC estimates that 5G technology will add $1.3tn to global GDP by 2030. This digital universe has seen the emergence of new services such as HD video, XR, and the metaverse. These evolutions raise the requirements for higher data rates such as 1Gbps anytime, anywhere and 10Gbps in hotspots to support a ubiquitous digital user experience.

To that end, a sufficient mid-band spectrum will be mandatory for future mobile service growth. GSMA Research estimates that mid-band 5G (1GHz – 7GHz) could deliver $610B GDP growth in 2030 (63.5% of the total 5G benefit). The GSMA also says an average of 2GHz mid-band per country is necessary as spectrum reserve for mobile services in the next decade. To secure optimal 5G performance in the long-term, more capacity in this range is needed, and 6 GHz is a prime candidate.

To build on this momentum, the mobile industry supported the adoption of 6GHz for 5G and beyond. The World Radiocommunication Conference 2019 (WRC-19) agreed to establish a new agenda item to study upper 6GHz for IMT (International Mobile Telecommunication) at WRC-23. Additionally, the GSMA has advocated 6GHz as the primary band for the future of 5G evolution and officially set up a 6GHz Supporting Group. Furthermore, several countries and MNOs have launched 6GHz IMT field tests between 2021 and 2022 such as "etisalat by e& in UAE".

Such ongoing global collaboration is important to cultivate the 6GHz IMT ecosystem to get it commercially ready for IMT evolutions beyond 5G by 2025

> *The GSMA Research estimates that mid-band 5G (1GHz – 7GHz) could deliver $610B GDP growth in 2030 (63.5% of the total 5G benefit). The GSMA also says an average of 2GHz mid-band per country is necessary as spectrum reserve for mobile services in the next decade.*

timeframe. Some countries have already announced consideration of 1.2GHz bandwidth within the 6GHz band for 5G and beyond. Other countries considered the split of the band, with the upper 700MHz portion potentially being planned for 5G and its evolution, while the lower 500MHz tranche is made available for exempting

license. (e.g. Wi-Fi, 5G NR-U (New Radio Unlicensed), among others.

Be practically irreversible, leading to an imbalance in such mid-bands assignment along with a great opportunity loss for 5G technologies and economies. In addition, Wi-Fi user experience could be limited by broadband fixed access network capacity and penetration, unlicensed technology limitations and low-end access points rather than the shortage of spectrum.

Therefore, it is important to weigh the decisions carefully when allocating frequencies to licensed or unlicensed operations in the 6GHz band, noting that we have already seen how mid band can drive 5G network evolution. Furthermore, using advanced Massive MIMO technologies, 6GHz can achieve similar coverage as C-band with even higher capacity, making 6GHz an ideal band for balancing the capacity and coverage necessary to meet future wide area deployment requirements in a cost effective manner.

The Middle East is leading the world in digitizing its economies and societies. Countries in the region were among the first to roll out 5G and are already benefiting from the rise of new use cases and business models. This progress has been the result of strategic thinking and future proofing ICT infrastructure. Spectrum issuance should be seen in a similar light. The correct choice today will positively impact socio economic growth for years to come.

While license-exempt spectrum contributed to the delivery of many benefits to end users worldwide, the allocation of the 6GHz band for unlicensed usage would supporting IMT identification in the band 6425 – 7125 MHz at WRC-23 will allow making the right decisions later depending on the specific situation. ∎

Huawei: 5.5G is a key milestone on the path to an intelligent world

The Striding Towards the Intelligent World Summit at HUAWEI CONNECT 2022 successfully concluded on 23 September. David Wang, Huawei's Executive Director of the Board and Chairman of ICT Infrastructure Managing Board delivered a keynote speech titled Embracing the 5.5G Era: Striding Towards the Intelligent World at this summit.

In this speech, he stressed that 5.5G is a key milestone on our path to an intelligent world and released Huawei's latest series of white papers on the intelligent world. Wang also called upon the ICT industry to coordinate efforts around eight facets of this vision. By working together to further define and refine the industry vision and standards for the 5.5G era, the industry will move ever faster towards the 5.5G era and the intelligent world.

In the future, individuals, households, and industries will have higher requirements for digital infrastructure.

For individuals, immersive services like XR and holographic communication are maturing, and connectivity experience is set to increase from 1 Gbit/s to 10 Gbit/s. Mobile DOU will surge from today's 15 GB to 100 GB. Requirements for latency and ubiquitous connectivity will also increase.

For households, the demands generated by advanced services like 24K 3D VR games and holographic education and meetings are creating a full-fiber, 10 Gbit/s era.

For industries, digital transformation has now entered the fast lane. Industrial-grade applications such as smart manufacturing and power grid dispatching are raising diversified requirements for connections, quality, and sensing, while also triggering explosive growth in demand for computing power and storage.

More specifically, he said that industry

players would have to come together to:

1.Promote the allocation of more spectrum to accelerate industry development and continue exploring new 5.5G use cases with greater commercial value

2.Define the technical paths forward and standards for F5.5G

3.Quickly reach a consensus on evolution towards Net5.5G

4.Define a profile for L4/L5 autonomous networks and promote unified standards

5. Build an open and diversified computing industry for shared success and redefine the computing architecture

6. Define a storage architecture that meets diversified data processing requirements

7. Build a cloud foundation for the intelligent world and cultivate a stronger cloud service industry ecosystem

8.Adopt a unified NCIe system to help industry save energy and reduce emissions with innovative ICT technologies and solutions.

Wang also released Huawei's latest series of white papers, which are titled Striding

Towards the Intelligent World. Guided by the next steps relating to the eight facets mentioned above, these white papers explore both the opportunities and challenges that will be presented to major ICT infrastructure domains by emerging business needs and technological developments. The white papers also outline key trends in these domains and specify actions that the company recommends the industry should take before 2025.

Huawei's Chief Strategy Architect Dang Wenshuan then took the stage to discuss the contents of the white papers in more detail. He emphasized two concepts the company would like to promote as we move towards 5.5G and eventually the intelligent world:

1."ICT for Intelligence" which focuses on constant innovation and evolution in different ICT domains to improve key capabilities.

2."Intelligence for ICT" which focuses on the intelligent and architectural innovation within the ICT industry itself that will be needed to address challenges like increasingly complex O&M, ensuring user experience in diversified service scenarios, and green development. Addressing these challenges will help us make the most of

existing and coming core ICT capabilities and lead us to the intelligent world faster.

Meanwhile on the second day of HUAWEI CONNECT 2022 Bangkok, Huawei launched a range of innovative infrastructure solutions to drive industry digitalization by finding the right technology for the right scenario. Industry stakeholders gathered and held discussions around the theme "Innovative Infrastructure to Unleash Digital", exploring the future directions and opportunities for industry digitalization. They analyzed the challenges of different industries striving to go digital, and Huawei introduced solutions supported by its technical strengths to help address these challenges.

The right technology for the right scenario: Making it easier to go the "last mile" of digitalization

Ryan Ding, President of Huawei Enterprise BG, said in his keynote speech "Empowering Industry, Creating Value" that "Deeper digital transformation will help companies better adapt to an ever-changing world."

According to Ding, using its connectivity, computing, and cloud technologies, Huawei is working with its partners to drive ongoing industry innovation and multi-tech synergy, creating scenario-based solutions for diverse customer needs. He added that this will create greater value and make it easier for customers to go the "last mile" of their digital transformation.

Key innovative technologies and stronger infrastructure to unleash the power of digital

Bob Chen, Vice President of Huawei Enterprise BG, discussed how multi-tech synergy is critical for finding the right technology for the right scenario. He explained in his keynote speech "Innovative Digital Infrastructure Accelerates Digital Transformation" that "Data is at the core of digital transformation, and data ingestion, transmission, storage, and analysis are key steps. Huawei provides full-stack products and product portfolios to support

Ryan Ding - President, Huawei Enterprise BG

end-to-end data processing, accelerating customers' digital transformation."

Huawei Empower Program: Building a thriving digital ecosystem for global partners

At the event, Huawei launched the Huawei Empower Program, a global partner development plan, which is intended to help develop a thriving digital ecosystem for global partners. This program will help Huawei's partners build three types of capabilities to better serve customers: digital transformation consulting and planning, product and portfolio expertise, and solution development. Through this program, Huawei will conduct joint innovation with partners via OpenLabs, empower partners with a new framework, a new plan, and an integrated platform, and build a talent pool through the Huawei ICT Academy and Huawei Authorized Learning Partner (HALP) programs. Huawei also announced that it would invest US$300 million in this program to support global partners in the next three years.

White Paper Data Storage Power – The Digital Cornerstone of High-Quality Development

During the event, Huawei also officially released its white paper, Data Storage Power – The Digital Cornerstone of High-Quality Development. Examining the development of the storage industry, the white paper defines quantitative indicators to measure data storage capabilities and analyzes the current data storage landscape across different regions around the world. It

Bob Chen - VP of Huawei Enterprise BG

aims to help governments and enterprizes better evaluate, design, and build data storage capabilities.

Gu Xuejun, Vice President of Huawei IT Product Line, said: "The data storage capability is currently measured by capacity. However, with the rapid development of the industry and the emergence of new, diversified data services such as AI and big data, capacity alone is not enough to measure the future development and construction of storage systems. We need a more scientific definition and evaluation system to effectively measure data storage capabilities."

Gu added, "I consider this white paper to be a meaningful exploration that will generate more interest in promoting the development of the data storage industry. Only when data is well stored, quickly computed, and stably transmitted through networks can digital infrastructure unleash the value of data and better promote high-quality economic and social development."

The three-day conference in Bangkok is the first stop on HUAWEI CONNECT's global tour in 2022. For the first time in the Middle East, Huawei will introduce its Huawei CONNECT global event to Dubai. The 2nd stop of Huawei Connect 2022 will be running in parallel with GITEX GLOBAL 2022 on October 11th and 12th at Madinat Jumeirah. At the event, Huawei will cover industry digitalization and the opportunities it brings, and how technologies like AI, Cloud and 5G are uncovering fresh value across all industries.∎

Huawei Intelligent Cloud-Network, leading Digital Innovation

Huawei unveiled the upgraded capabilities of its Intelligent Cloud-Network Solution at the summit entitled "Intelligent Cloud-Network, Leading Digital Innovation", held during HUAWEI CONNECT 2022 Bangkok. The capabilities cover three major scenarios — CloudFabric, CloudWAN, and CloudCampus — and were created in an effort to meet customers' changing requirements. Huawei also released its Wireless Intelligent Network Architecture White Paper to further guide enterprizes in digital innovation.

As digital transformation advances, enterprise services pose new requirements on data communication networks. First, massive numbers of IoT connections demand ultra-broadband and ubiquitous connectivity. Second, enterprize branch services are gradually moving to the cloud, requiring networks to provide flexible deployment and fast cloudification capabilities. Third, new services need to be rolled out on large scale and services need frequent adjustments, requiring networks to be agile, secure, and efficient. Finally, video conferencing is becoming commonplace, meaning that networks have to provide deterministic experience assurance.

Sun Liang, Vice President of Huawei's Data Communication Product Line, noted that Huawei Datacom had developed the Intelligent Cloud-Network Solution through continuous innovation to address the preceding challenges. This solution provides key capabilities such as ultimate access experience, ultra-fast cloud access by branches, deterministic experience, and efficient and simplified deployment. Currently, the Intelligent Cloud-Network Solution has been widely used in sectors such as education, retail, government, and finance, facilitating digital transformation for customers. For example, in the education sector, the all-wireless Wi-Fi networking solution provides ultimate network access experience; in the retail sector, the SD-WAN ultra-fast cloud access solution enables one store to be opened in just one day; in the government sector, Huawei's network slicing technology enables converged transport over one network and 100% assurance of business-critical services; in the financial sector, the simplified cross-domain multi-cloud service

Sun Liang - *VP, Huawei's Data* Communication Product Line

deployment solution enables services to be rolled out within minutes.

At the conference, Huawei also unveiled a number of new data communication products, such as the industry's first Wi-Fi 7 AP AirEngine 8771-X1T, 400G-ready next-generation campus core switch CloudEngine S16700, and the 4-in-1 universal-service intelligent router NetEngine 8000 M4.

At the conference, customers from various industries shared how they have used Huawei's Intelligent Cloud-Network Solution in their commercial practices. Agus Ariyanto, Vice President Network of Biznet, delivered a speech entitled "Biznet Builds a Future-oriented Intelligent WAN." He said that "Built on a flat metro network, Huawei helps Biznet consolidate its leading role in the Industry. Together with Huawei, we'll explore more regarding emerging technologies and business innovation based on IPE." Billy Wong, Chief Technology Officer of Nova Credit Limited, delivered a speech entitled "Financial Cloud-Network, Promoting FinTech Innovation." He noted that "In Nova Credit's data centers, we deployed Huawei's CloudFabric data center network solution. On the physical layer, Huawei CloudEngine data center switches build high-performing 40GE/100GE interconnections; on the management layer, the solution provides full-lifecycle automation capabilities and easy SDN experience."∎

HUAWEI CONNECT 2022 unleashes Global Cloud Innovations and unveils "Go Cloud Go Global" Ecosystem Plan

The 7th annual flagship event for the global ICT industry, Huawei Connect 2022 began in Bangkok, Thailand. The theme of this year's event is "Unleash Digital", gathering over 10,000 ICT industry leaders, experts, and partners from around the world to explore how to more effectively unleash digital productivity, promote the digital economy, and build up stronger digital ecosystems.

At the event, Huawei shared the steps it's taking to advance digital development across a wide range of industries and released 15+ innovative cloud services for the global market.

Kicking off the event, Ken Hu, Huawei's Rotating Chairman, delivered a keynote outlining three ways the ICT ecosystem can help break through common barriers in digital transformation:

•Boost digital infrastructure, including more robust connectivity and stronger, more diverse computing resources.

•Help organizations go beyond simple cloud adoption and truly make the most of cloud, focusing on advanced technology services that drive leapfrog development.

•Build out local digital ecosystems, including partner development, strengthening the digital talent pool, and providing more support for SMEs.

At the event, Zhang Ping'an, CEO of Huawei Cloud, unveiled the "Go Cloud, Go Global" ecosystem plan, and reaffirmed the commitment to Everything as a Service. Jacqueline Shi, President of Huawei Cloud's Global Marketing and Sales Service, said that Huawei Cloud will launch more than 15 innovations globally, covering cloud native, AI development, data governance, digital content, software development, and MacroVerse aPaaS.

Ken Hu - Rotating Chairman, Huawei

At the event, Ken Hu also spoke about how the First Affiliated Hospital of the Medical School at Xi'an Jiaotong University used AI to expedite pharmaceutical R&D and new drug discovery.

In the pharmaceutical industry, an average of over 1 billion USD and 10 years is needed to put a new drug on the market, from development to approval. While developing antibiotics, it has been noted that resistant bacteria are sometimes discovered even before newly developed antibiotics finish clinical trials.

By using an AI-aided drug design service powered by Huawei Cloud's Pangu Drug Molecule Model, Professor Liu Bing of the First Affiliated Hospital of the Medical School at Xi'an Jiaotong University and his team developed a new broad-spectrum antimicrobial drug in just one month, and R&D costs were slashed by 70%.

A major challenge in new drug discovery lies in the screening of hundreds of millions of existing drug molecules. Traditionally, drug screening was performed by experts in labs, which was costly, slow, and had a high failure rate.

The Huawei Cloud Pangu Drug Molecule

Model has been trained using the data of 1.7 billion drug-life molecules and can predict the physicochemical properties of drug compounds and score them based on their druglikeness. Researchers can then do targeted experiments to verify drug compounds that have the highest scores.

Moreover, the Pangu Drug Molecule Model's molecular structure optimizer can be used to optimize the structure of lead compounds, minimizing the potential side effects of the new drugs on normal human cells.

Today, cloud has become an important carrier for digital companies. Huawei Cloud provides four development pipelines, including ModelArts the AI development pipeline, which customers and partners from all industries can access on demand, so they can leave the technical side of digital innovation to Huawei Cloud, and concentrate more on what matters most to them.

According to Ken Hu, organizations should embrace the cloud for leapfrog development as digital smart tech is the future. Huawei Cloud has integrated more than 240 services and more than 50,000 APIs to bring the latest AI, application development, and big data technologies and development tools to the cloud. The innovation and expertise of Huawei Cloud will help more organizations move to the cloud faster and better.

The three-day conference in Bangkok is the first stop on HUAWEI CONNECT's global tour in 2022. Featuring two keynote sessions, six summits, as well as multiple breakout sessions and demos, this year's event dives into the challenges that governments and enterprises face at all stages of their digital transformation journey, Huawei's advancements in digital infrastructure, as well as the company's latest cloud services and ecosystem partner solutions.∎

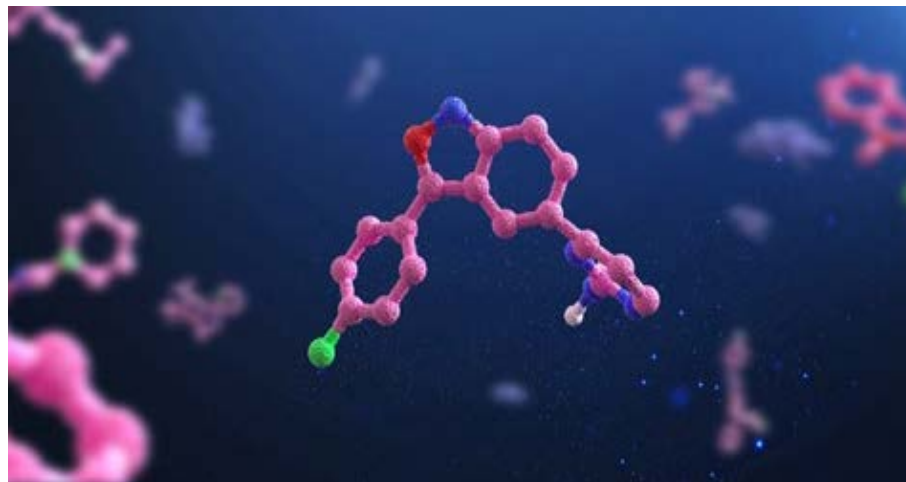# Huawei Cloud launches Drug Molecule Model to accelerate Drug Discovery

Huawei recently hosted its 7th annual flagship event for the global ICT industry, Huawei Connect 2022, held in Bangkok, Thailand this year. In line with this year's theme "Unleash Digital", Ken Hu, Huawei's Rotating Chairman, spoke about how the First Affiliated Hospital of the Medical School at Xi'an Jiaotong University used Artificial Intelligence (AI) to expedite pharmaceutical R&D and new drug discovery.

Drug discovery and development is a cost-intensive and time-consuming process. In the pharmaceutical industry, an average of over 1 billion USD and 10 years is needed to put a new drug on the market, from development to approval. While developing antibiotics, it has been noted that resistant bacteria are sometimes discovered even before newly developed antibiotics finish clinical trials.

That being said, the healthcare industry recognizes the potential of AI and related platforms as the major factor for accelerated growth. AI has significant applications in the drug discovery field as it can speed up the time needed to research and develop new drug compounds in drug discovery, helping researchers to discover novel chronic disease treatments in months as opposed to years.

Artificial intelligence has been making inroads in drug discovery for a good part of the last decade. BCG recently published an analysis that showed that biotech companies using an AI-first approach have more than 150 small-molecule drugs in discovery and more than 15 already in clinical trials. This AI-fueled pipeline has been expanding at an annual rate of almost 40%.

AI uses automated algorithms – sets of instructions that computers follow – to perform tasks previously done by humans. It can sift quickly through large datasets to detect hidden patterns and perform tasks within seconds that would usually take months.

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Huawei Cloud is committed to a digital ecosystem by all and for all. Huawei Cloud will make it easier for organizations to use cloud technologies and helps cloud-empowered enterprizes go global with global marketing, service, and ecosystem support derived from Huawei's globalization and localization experience in more than 170 countries and regions as well as industry insights and practical experience in hotspot areas.∎

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ENTERPRISE SOLUTIONS

TELECOM SERVICES

HR BPO SERVICES

MANAGED SERVICES

CLOUD AND IOT

FACILITY MANAGEMENT

e& expands partnership with MoneyGram

e& is one of the world's leading technology and investment conglomerates, and MoneyGram International, a global leader in the evolution of digital peer-to-peer (P2P) payments, has announced an expansion of their strategic partnership enabling e&'s large and fast-growing customer base of 160 million to send and receive money through mobile wallets across its footprint in near real-time.

In the UAE, e& money, the fintech arm of e& life has been partnering with MoneyGram for international remittance service. This agreement solidifies e&'s global aspirations across its other markets to offer customers the most inclusive financial services powered by a seamless experience.

Through mobile wallet app customers in e& international markets can send and receive money globally quickly and effortlessly due to the efficient transactional process offered by MoneyGram. The wallet-to-wallet proposition also amplifies a seamless digital financial experience, given the rapidly evolving customer payment behaviors and the accelerated adoption of contactless payment solutions.

Mikhail Gerchuk, CEO, e& international said: "As more people across the world embrace digital financial services, we are continuously seeking new ways to empower our customers with the best solutions, and embark on value-adding partnerships that help them to access financial services
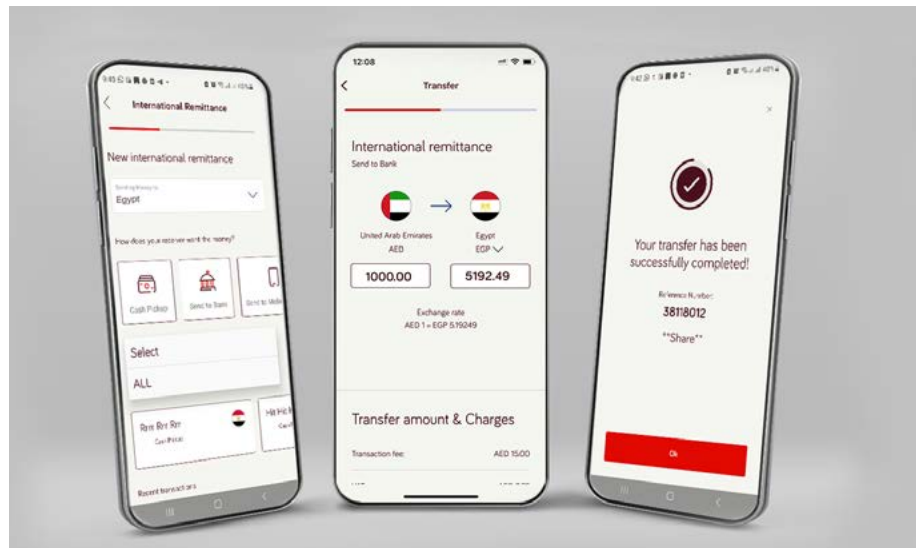
quickly and easily. International money transfer is a crucial service that enables our customers across our footprint to send and receive money from their families, given the large expat population living in the markets where we operate.

Through MoneyGram's expansive network of mobile wallet operators, bank account and card deposit services, and retail locations, customers around the world have the ability to choose how to send and receive money based on their unique requirements. The service has been live throughout UAE and Afghanistan, with Egypt, Pakistan, Saudi Arabia and several other e& international markets in Africa expected to launch in the next few months.

Khalifa Al Shamsi, CEO, e& life, said: "We have always aimed to revolutionise customer experience through innovative solutions that help meet the financial needs of our customers. The strategic partnership with MoneyGram has been enabling us continue building this solid foundation of growth, adding to the array of financial products and services that enhance and add value to our customers' lives. We will continue to work with MoneyGram and its vast network for the benefit of e& money subscribers while addressing the growing demand for a financial super app marketplace."

"As a result of our strategy to invest in our digital network that now extends to over 100 countries, we're seeing increased demand to access our global platform. As more digital partners seek to embed our leading fintech capabilities into their service offerings, we see a significant growth opportunity to efficiently add transactions to our scalable platform," said Alex Holmes, MoneyGram Chairman and CEO. "Our collaborative relationship with e& has grown to become one of our strongest and more successful digital partnerships. We're thrilled to continue to expand our relationship as their preferred partner for cross-border payments across all of the 16 markets in which they operate." **T**

Khalifa Al Shamsi - CEO, e& life

Mikhail Gerchuk - CEO, e& international

Saturn Satellite Networks (SSN) announces its latest venture, Space Broadband Networks

Saturn Satellite Networks, Inc. (SSN) has announced its latest venture, Space Broadband Networks (SBN), with its first fleet (SBN-1) of six geostationary HTS satellites to be launched directly into Geostationary orbit and operational within the first half of 2025. SBN will be utilizing Saturn's Intelligent Space Node (ISN) High Throughput Satellites with an unprecedented flexible and adaptable digital payload, providing the most affordable internet and data communication to end users, governments, and industries with high demand. ISN HTS satellites have a fully software-defined payload allowing our users to have real time beam positioning and full meshed communications. All user and gateway beams are dynamically assignable through software commands on the ground enabling the satellite to be programmed for specific coverages, operated anywhere on the GEO arc, and if required, moved to a new location, reprogrammed and resume operations.

The ISNs' unique coverages are fully reconfigurable after satellite deployment and thereby enabling full adaptation and coverage tailoring to address constantly changing market demands and requirements or unforeseen political developments. The cost of data via the ISN satellites will be a fraction of today's GEOs or LEOs opening new target and user groups for satellite delivered internet and data connectivity. The first fleet SBN-1 with its satellites and capacity will be positioned and marketed in cooperation with regional and global operators with first deployments over the Americas, Africa and the Indo-Pacific regions. SBN-1 fleet will be made available for lease to satellite operators, large users and governments.

EMP as the financial partner, with its many years of aircraft financing expertise, structured the funding of the SBN-1 satellite fleet similar to a typical and established aviation asset financing, based on the fully

Thomas Choi
Founder Chairman
and CEO of SSN

fungible ISN satellite assets. Alongside its own equity investment, EMP arranges the Mezzanine facility from investors for the SBN1 program. The remaining investment is financed through senior debt, secured by export credit agencies (ECA).

SSN as the prime contractor of the ISN satellites, manages the design and development of the SBN-1 satellite fleet, working with the world's leading platform and payload suppliers, including multi-mission launch agreements. The SBN-1 fleet is composed of six ISN HTS GEO satellites providing up to 100Gbps per satellite. The ISN HTS GEO satellites are based upon one of the world most advanced on-board computers with hundreds of years of on-orbit heritage in deep space. Saturn is working with one of the leading aerospace companies in the world to produce the ISN HTS satellites in California with the intent that future builds will be done at Saturn's own facilities in Melbourne Florida.

The SBN program constitutes a paradigm shift in how satellites are designed, built, and financed. Every facet of the SBN program is designed to maximize flexibility at lower cost, while mitigating risk to provide affordable capacity at lower rates than currently available. The level of customer commitments demonstrates the tremendous

appeal of this service offering to end users and SBN's satellite operator partners.

"Our lower cost structure, compared with the mission cost of the industry's biggest VHTS satellite programs, enables capacity price reductions that we pass on to our customers and partners. Moreover, our partnership with EMP, one of the leading global aircraft leasing companies, allows satellite operators to lease our SBN satellites without the burden of a 3-year satellite procurement CAPEX expenditure", said Thomas Choi, Founder, Chairman and CEO of SSN. "As evidenced by over $1B in end user demand commitments, there is insatiable demand for affordable satellite capacity. And the program further enables access to those currently unable to afford current data rates and provides capacity for the expansion of capacity applications. Our pricing will be 1/5th to 1/10th the pricing of existing GEO and NGSO offerings."

"We are proud and honored to be a part of this outstanding project. With strong confidence in our partnership and the immense expertise of the Saturn Team led by Thomas Choi, we truly believe that we will create a Game Changer not only in technology but also in financing for the Industry.", says Philipp Prior, Founder and Managing Partner of EMP.∎

stc safeguards the digital ecosystem with the launch of Security Pass Program for Suppliers

stc has launched Security Pass Program as commitment to advancing Saudi Arabia's tech landscape. stc has officially become one of the first telecom companies in the world to launch a cybersecurity assurance program for its suppliers.

The Security Pass Program for Suppliers will ensure that all stc suppliers meet the brand's stringent standards and adopt cybersecurity best practices.

Suppliers are encouraged to obtain a certificate of compliance with the cybersecurity controls outlined in stc's third-parties security standards. Suppliers can confirm their compliance with stc cybersecurity requirements by obtaining the certificate from audit and assessment firms, accredited by stc.

stc has introduced the cybersecurity certification to secure its infrastructure, Data, and communities it serves. In line with its mission to bolster the region's tech sector and enhance its infrastructure, the launch of the certification will strengthen the provider's security position by reducing third party cybersecurity risks.

"At a time when cybersecurity risks continue to grow and prove even more costly to businesses and industries across the world, our new certification will help to ensure our partners and the Kingdom's wider tech ecosystem are appropriately safeguarded and future proofed".

Haithem Mohammed Alfaraj Group CTO, stc Group

Haithem Mohammed Alfaraj, Group Chief Technology Officer, stc Group, said: "The launch of the Security Pass Program for Suppliers marks yet another important step towards transforming the Kingdom into a hub of innovation".

"At a time when cybersecurity risks continue to grow and prove even more costly to businesses and industries across the world, our new certification will help to ensure our partners and the Kingdom's wider tech ecosystem are appropriately safeguarded and future proofed. This is especially important within our industry as third parties are typically challenged by exacting cybersecurity risks. Our new certification will provide timely and essential support, ensuring our partners, suppliers and resources are protected and secured."

Crucially, the move will encourage stc's network of partners to obtain a certificate of assurance for cybersecurity. This will help to ensure that unexpected incidents are avoided through the adoption of stc standards. Obtaining the Security Pass certificate is a prerequisite to sign any partnership contract with stc.∎

stc launches "Saudi Vision Cable", the first high-capacity submarine cable in the Red Sea

stc has announced the landing of "Saudi Vision Cable," which is the first high-speed cable in the Red Sea through its first landing station in Jeddah.

With the name inspired by the KSA Vision 2030, the Saudi Vision Cable spans 1,160,000 meters and it is fully owned by stc Group. The Saudi Vision Cable is the first ever high-capacity submarine cable in the Red Sea region that will provide seamless connectivity up to 18Tbps/fiber pair with a total of 16 fiber pairs through four (04) landings in Jeddah, Yanbu, Duba, and Haql.

Marking this event, Eng. Olayan Bin Mohammed Alwetaid, Group CEO of stc, said: "This achievement reflects our comprehensive strategy that aims to diversify the Group's investment opportunities and support digital transformation in the KSA by boosting the digital infrastructure. The cable will provide digital connectivity services for corporates and individuals between the KSA and the continents by building a regional digital hub connecting the continents of the globe and help meet the needs of companies and customers via an integrated digital ecosystem".

"Saudi Vision Cable provides communication between several international information centers. It also achieves the raising level of the unified optical fiber platform that is cost-efficient and flexible, and provides access – low latency - to all international cables in the landing stations and information centers of the stc Group", he added.

The new cable will be one of the submarine cables that will be linked to the MENA Hub connecting three continents of the globe, leveraging the strategic location of the KSA. This will help to enhance investment in international communication services and data centers.

This cable will join 16 cables invested by stc that are positioned between the east and the west of the KSA. Saudi Vision Cable will provide a higher and more reliable internet service to meet the increasing demand for communications and internet at the local and international levels. It will also allow all of the country's sectors to obtain high-speed internet services, including education, healthcare and business which will, in general, provide economic and social benefits. ∎

The importance of 6GHz spectrum allocation for 5G

There is no question that if leveraged and monetized correctly - 5G is going to act as a global economic driver, infact as per GSMA's latest report, 5G will bring an economic contribution of $700 billion to the society in 2030. Given that 5G is an enabler of a technology driven digital society and economy and it supports national digital transformation goals by providing reliable, high capacity, low latency, and wide-area connectivity to consumers and industries, it has become very important to support 5G requirements that will further unlock opportunities and will also lay the foundation for advanced 5G deployments of the future.

Although, 5G services have been launched in more than 70 countries, boasting 220 5G networks and over 700 million users, one of the biggest challenges faced by service providers is that of spectrum allocation. Considering that the contribution of mobile technologies and associated services is expected to surge to 4.9% of the global GDP by 2024, there needs to be sufficient spectrum resources for IMT/5G in place to provide the capacity for innovation and development of new services. To keep up with the explosion in data driven by today's data-heavy and tech savvy generation, regulating spectrum for mobility and connectivity has become more important than ever.

Therefore, allocation of right amount spectrum in the right bands through licenses assures optimal utilization of the spectrum by operators. It also allows operators to offer innovative services with predictable quality of service. As of now, most of the current investments on 5G networks have been focused on mid-bands (3.3GHz-3.8GHz). However, to keep up with the growing demand for data, supporting advanced Industry 4.0 use cases and to deliver cost efficiency there is growing need for spectrum to be allocated in the 6GHz band. Reserving the spectrum around 6GHz (6425-7125 MHz) is essential

By - Saurabh Verma, Director ICT and Sami Shaikh, Consultant ICT, Frost & Sullivan

to deliver the full potential of 5G-NR and its evolution in the future (i.e., 5.5G and 6G). Allocation and licensing of spectrum in 6GHz band would also enable operators to tackle the challenges of congestion and interference. Sighting the importance of allocations spectrum in the 6GHz band the 3GPP RAN Plenary has rolled out the N104 standardization for U6G (upper 6G, 6425–7125 MHz) as a new IMT licensed frequency band.

Importance of Licensed 6GHz Spectrum Allocation

The use cases delivered by 5G are extremely important from a digital transformation perspective and considering that 5G has the potential to accelerate world's GDP, regulators need to ensure that the right steps are taken to support the future development of 5G which will unlock economic growth opportunities. However, this growth can significantly be hampered if additional 1 to 2 GHz of additional mid-band spectrum is not allocated. In the absence of mid-band spectrum, service providers will have to invest in costly, non-economic infrastructure to density their 5G networks to provide the necessary capacity and coverage promised by 5G.

This in-turn will make 5G services more expensive for the consumers and businesses. Estimating the growing spectrum needs in the 2025-2030 time-frame, the 6GHz is one of the optimal bands in medium frequency to provide seamless wide-area coverage and high-capacity connections. The 6Ghz mid-band provides the perfect balance between coverage and capacity and provides the ideal environment for 5G connectivity. It enables services providers to offer more bandwidth and improve network performance.

Additionally, the wide, contiguous channels offered by this range reduces the need for network densifications thereby making next-gen connectivity more cost-effective and affordable for everyone. To sustain healthy IMT development, the 6GHz range is an ideal solution to address the spectrum challenge in ensuring optimal future 5G connectivity and thus the 6425-7125 MHz is a priority band for mobile network operators globally as they look to increase capacity and lower deployment costs.

Since harmonization of 6GHz spectrum will provide more bandwidth and improve network performance, hence licensed 6Ghz band is also seen as the potential candidate

to emerge as the next C-band. The C-band which is now the most popular 5G band in world, is known for its characteristics of capacity, coverage and security and sits between the 2.4GHz and 5GHz bands. For commercial success and future deployments of 5G-NR and 5G-Advanced, the 6GHz band can provide the additional 1-2 GHz of mid-band spectrum that would be required to meet the IMT-2020 user experienced data rates of 100 Mbit/s on the downlink and 50 Mbit/s on the uplink in cities with a high density of population.

The 6Ghz band that brings with additional spectrum also enables MNOs to optimize their investments made on existing network infrastructure, 6GHz can Re-use existing C-Band macro-cell grid to provide high capacity citywide as well as urban and suburban coverage, thereby reducing cost per bit and simultaneously addressing the connectivity needs of both densely populated cities and remote areas with lesser population. Given the data and spectrum requirements in the 2025-2030 timeframe the 5925-7125 MHz range has the potential to address the expected need for more mid-bands spectrum.

Depending on the maturity and the installed base of network infrastructure, regulators in each country could take a different approach. For example, countries that have a well-developed fiber, cable, or DSL broadband access network could make the 6425-7125 MHz band available for 5G to deliver the IMT-2020 requirements. Whereas countries that rely heavily on wireless for connectivity, could use of the entire 5925-7125 MHz for 5G and its evolution.

The future development of 5G to 5G-Advanced is dependent on 6GHz which is a valuable resource. Countries need to make sure that the potential of 5G is not hampered in any way, as this could act as barrier in digitization of society and could push a country backwards, thereby increasing the gap with other economies. Thus, harmonization of the 6GHz spectrum for IMT is imperative for socio-economic growth. Currently, the global spectrum demand and consensus on 6GHz has been

formed, and WRC-23 will be the key path to promote this consensus.

What Initiatives Have Been Taken So Far

Global operators including BT, Vodafone, Deutsche Telekom, Orange, Telefonica, and Telia Company, together with leading global suppliers including Ericsson, Huawei, Nokia, and GSMA Intelligence, jointly hosted 6GHz 5G/IMT Spectrum Forum to discuss the future use of the 6 GHz band, during Mobile World Congress held in Barcelona this year. The meeting called for the industry to recognize the importance of 6 GHz as 5G/IMT Spectrum to the mobile industry, promote the use of 6 GHz as WRC-23 approaches. Key contributions were made from important policymakers and regulatory bodies from Finland, France, Kenya, Tunisia, and the UAE.

Some countries have already taken a head start to leverage the 6GHz spectrum. Leading by example is one UAE's largest operator Etisalat by e&, who announced the successful completion of its first trial of the 6GHz spectrum, creating history by taking this monumental step for the future of 5G, opening a world of possibilities for next-generation technologies and economies of the future. Countries like China intends to use the entire 1200 MHz in the 6GHz band for 5G NR; Europe is considering using the upper part for 5G NR with the 500 MHz in the lower part of the 6 GHz band already harmonized for unlicensed use (i.e., Wi-Fi 6E/NR-U); whereas, UAE and Morocco allocated limited unlicensed use to the

lower 500 MHz of the band.

Allocation of 6Ghz spectrum will unlock the potential of 5G to bring to life innovative use cases and applications that require faster and more reliable mobile broadband for consumers and business. 5G enabled services like Fixed Wireless Access, Next-Generation Industrial Automation that will be delivered leveraging 6Ghz spectrum will increase process efficiency, reduce cost, and improve safety. In verticals like healthcare and transport, speed, and latency capabilities of 5G will make advanced telemedicine with remote surgery a possibility, while connected transport will be enabled along with highly efficient public transport networks.

Mobile networks have the potential to create tremendous economic and social value – more than any other wireless technology and thus the mobile industry's need for more spectrum reserve is justifiable. To deliver the desired speeds and capabilities of 5G, mid-band spectrum is crucial as it can secure performance in the long term and add more capacity if required. Allocation of the 6GHz spectrum is the ideal solution to ensure continuous support for 5G development. Hence regulators are being urged to ensure the upper band (6425 to 7125 MHz) is available for public mobile networks. The development of 6GHz IMT ecosystem and making it commercially available is important and this can only be achieved through global collaboration and unified approach by all eco-system players. ▪

Hughes launches new High-speed, Low-latency Satellite Service plans for consumers

HughesNet Fusion plans combine satellite and wireless technologies for a high-speed, low-latency Internet experience
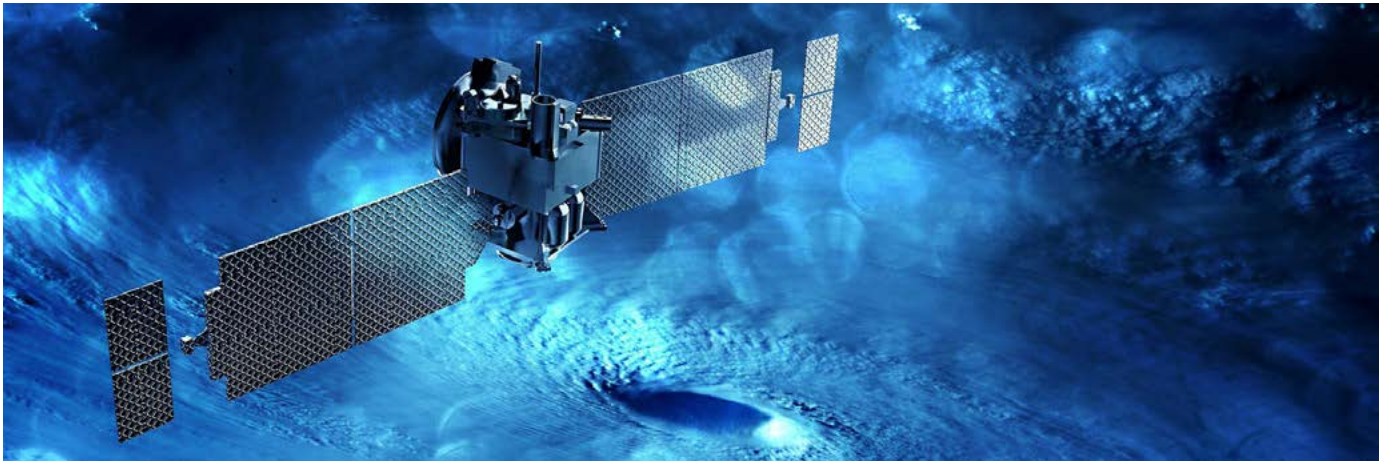
Hughes Network Systems, LLC (HUGHES), an innovator in satellite communications for over 50 years, has announced that it started rolling out a new low-latency satellite Internet offering to consumers in select U.S. markets. Available as HughesNet® Fusion plans, the multi-path offering seamlessly blends Geostationary (GEO) satellite and wireless technologies into a fast and responsive satellite Internet experience.

"With HughesNet Fusion plans, we are solving the latency challenge inherent with GEO technology, while maximizing the many advantages of these time-tested satellites, including low cost, reliability, dense capacity and widespread availability," said Pradman Kaul, President of Hughes. "GEO satellites are the workhorses of the connected ecosystem, essential for meeting the demand for connectivity everywhere, particularly in rural areas, whether alone or in combination with other transports such as wireless and Low Earth Orbit (LEO) satellites."

The Hughes multi-path technology was previewed for reporters at the SATELLITE conference in March 2022. Today, HughesNet customers in select markets who want a faster, more responsive satellite internet experience can take advantage of the HughesNet Fusion plans.

Kaul continued: "We are rapidly entering an era in which hybrid connectivity—both multi-transport and multi-orbit—will be commonplace. To realize that connected future, at Hughes we are integrating different transports with smart technologies and managed services to create a dynamic, always-on, connected environment that we call the ActiveComms Ecosystem. The HughesNet Fusion plans are an outcome of

Pradman Kaul - President, Hughes

that approach."

"HughesNet Fusion plans elevate satellite internet as we know it today," said Peter Gulla, Senior Vice President, Hughes. "The multipath solution represents our continued commitment to meet the changing needs of those who live where other high-speed providers do not reach. The launch of our ultra-high density JUPITER™ 3 satellite next year will bring further service enhancements, including service plans with speeds up to 100 Mbps down."

When using satellites for Internet access, signals travel a long distance from device to a satellite in space and back. The time it takes for the signal to travel is known as latency. This delay doesn't impact most Online activities but can be noticeable when, for instance, browsing content-rich sites and video conferencing.

Delivering low-latency satellite connectivity with 25 Mbps download speeds and No Hard Data Limits, HughesNet Fusion plans are available today to HughesNet customers in select regions across the country. Hughes aims to roll out the offering in markets across the U.S. later this year. ∎

Es'hailSat at IBC 2022

Showcased the capabilities of Es'hail-1, Es'hail-2 and Es'hailSat Teleport, key broadcast infrastructure for the MENA region

Es'hailSat has exhibited at the annual IBC exhibition in Amsterdam, the leading platform for the broadcast, content delivery, digital media and satellite sectors across the Middle East, Africa and Asia. Es'hailSat has showcased Es'hail-1, Es'hail-2 and a wide range of services to be delivered through the new 50,000 sqm state of the art teleport in Doha. Es'hail-1 and Es'hail-2 are currently transmitting high quality, premium DTH television content from the 25.5°/26° East hotspot.

Es'hail-2, a high-performance satellite with sophisticated anti-jamming capabilities located at 26° East hotspot position for TV broadcasting, significantly adds to the company's ability to provide high quality, premium DTH television content across the Middle East and North Africa.

Es'hailSat's 50,000 sqm teleport provide customers with secure and independent satellite transmission. The facility supports satellite TT&C and capacity management together with a wide range of services

Ali Al Kuwari
President and CEO of Es'hailSat

including uplink, downlink, multiplexing, encoding, playout, VSAT and other value-added services. The high-tech teleport will also provide back-up studios for TV channels and serve as a disaster recovery facility for customers.

Ali Al Kuwari, President and CEO of Es'hailSat, said: "We have been expanding upon our gamut of services since the launch of Es'hail-1 & Es'hail-2 to grow beyond our local market, and now with the capabilities we have built from our new state of the art teleport, IBC gives us the right platform to engage with customers and partners and showcase our capabilities and achievements. We are pleased to have exhibited once again at IBC as we see this exhibition an integral part of our business development efforts to attract international customers who seek optimal coverage while valuing broadcasting independence and quality of service". **T**

Kaz Handerson

Africa Tech Festival, Home of AfricaCom - Back in Cape Town for 2022

The world's most influential Africa-focused telecoms and tech event celebrates 25 years of connecting Africa's technology and enterprize ecosystems to build a more efficient, inclusive digital continent

Returning to Cape Town, South Africa in November after a 2-year break during which it was hosted online, Africa Tech Festival will welcome 10,000+ exhibitors, delegates, and policy makers from all over the world in November 2022, to continue shaping the continent's digital transformation.

The festival has broadened its remit with telecommunications continuing to represent a mainstay of the event. However, topics have branched out to include the full spectrum of technological advancements that are making a connected life across Africa and around the world a reality. In short, Africa Tech Festival unites telecoms, infrastructure, and policy to help leverage the disruptive power of technology and position Africa as a global 4IR leader that creates equitable, tech-enabled digital economies.

Of what to expect a quarter of a century on, James Williams, Director, Events Connecting Africa, Informa Tech, shares that: "As we know, COVID-19 sparked a rapid adoption of technology and telecommunications across the world, with digital transformation and

inclusivity across Africa being no exception."

"We are excited to be back in person this year, as are our exhibitors and speakers who look to continue the advancement of the African continent as a connected digital powerhouse. The agendas for AfricaCom and AfricaTech thus reflect the optimism and opportunity that a connected continent can bring not only to its inhabitants, but the world at large."

Africa Tech Festival has a well-deserved reputation for facilitating business, an array of developmental advancements and an enviable track-record in attracting key decision makers. As always, the event brings some of the industry's leading luminaries together, with the likes of Funke Opeke, CEO at MainOne, Nika Naghavi, Executive Director of MFS, Kuseni Dlamini, Chairman of Massmart and Dr Olufunso Somorin, Regional Principal Officer - Climate Change & Green Growth Program at the African Development Bank.

Other speakers to enlighten delegates include Nic Rudnick the Chief Executive Officer of Liquid Telecom, Ida Nganga, Regional Head at UNESCO Emerging Technologies for Development, Ocelyne Muhutu-Remy, Managing Director, Sub-Saharan Africa at Spotify, Fargani Tambeayuk, Head of Connectivity Policy at Meta, Danielle Agress, Country Manager for Southern Africa & Global Connectivity Sector Co-Lead at the U.S. Trade and Development Agency, as well as Alderman Geordin Hill-Lewis, the Executive Mayor of

Habiba Ben Barka - Chief, Africa Section, Division for Africa of the UNCTAD

James Williams - Director, Events Connecting Africa, Informa Tech

Cape Town, the official host city of Africa Tech Festival.

Calling Africa's future

Central to the conversation, will be discussions around the Future of Work, what that might look like and how Africa's vast small to medium and micro enterprize (SMMEs) sector will shape it. African SMMEs make up around two thirds of the continent's formally employed workforce, comprising 90% of the private sector, employing >80% of the workforce, and numbering >44 million.

With the youngest population in the world, (70% of sub-Saharan Africa is under 30), Africa looks to its SMMEs to grow sovereign economies, as well as the pan-African collective.

Seeking to empower SMMEs, Africa Tech Festival will focus content on helping the continent's future rights holders deliver on their promise. Consequently, Africa Tech Festival will present a dedicated stage that looks at 4IR Talent & The Future of Work. Wednesday 9th November opens with a keynote that will address Maximising the Potential of Africa's Human Capital. A panel, that could unlock potential ideas and business endeavours for the next successful SMME, entitled Surviving Talent Shortage in a Changing World also supports a Fireside Chat: The Future Workforce – Learning and Development in the 4th Industrial

Revolution, along with a panel: Youth Employment in Africa: Effective Strategies for Positive Outcomes.

Supporting the case to encourage the participation of more SMMEs in shaping Africa's future and based on findings from their recent publication on economic development in Africa, Habiba Ben Barka, Chief, Africa Section, Division for Africa of the United Nations Conference on Trade and Development (UNCTAD), remarked: "The African private sector (especially SMMEs) are potential new actors that can enhance the complexity and sophistication of production and business processes in Africa and influence a paradigm shift in trade expansion and economic diversification on the continent.

"Empowering SMMEs with access to financial services and technology-enabling services particularly provides greater opportunities for value addition, market expansion and industrial upgrading in Africa."

Access to capital for start-ups and expansion of SMMEs is always topical, and Africa Tech Festival's AHUB: Scaling Start-Ups Stage will host pitch sessions as well as inspiring and motivating discussions including an opening keynote on Supporting Start-ups to Foster Innovation.

Rounding out some of the content aimed at sparking SMME involvement, the AfricaCom Centre Stage in the Connectivity Hall, will present a discussion entitled: Affordable Internet Access for All: Empowering Africa's Connectivity Champions to Bridge the Digital Divide and a Fireside Chat discussing Mobile Financial Services: Leveraging the Power of Technology to Empower Economies.

Trading on tomorrow

To operate effectively, businesses need to take account of future operational needs such as data centres, cloud services and necessary cybersecurity. Business also needs the human capital with the requisite skills, all of which will be covered at this year's event.

Critical to any sort of fast-track future is the connectivity required for Africa to truly own its digital transformation. Hampering efforts are still availability, affordability, relevance, and readiness. According to InformaTech's 2022 'The State of Connectivity in Africa in

2022' report, Africa has the lowest number of Internet connections (most of them mobile) at only 39.9%.

Lack of connectivity also has a negative effect on education, severely limiting the benefits and participation of young people in the rapidly enhancing global digital world.

5G, infrastructure and connectivity will, therefore, feature strongly at Africa Tech Festival, as too, dedicated tracks around EdTech.

Kicking off the discussion around 5G under the Connecting Africa's Next Billion stream, is a Keynote Panel: Accelerating the Vision of a 5G-Enabled Africa. This session will include unpacking the argument that 5G could eventually be a cheaper way to deliver voice and connectivity.

The panel discussion Connectivity in Focus: 4G, 5G, and Africa's Network Migration, will discuss the limitations of 5G adoption (predominantly high deployment costs, consumer affordability and reticence), as well as look at how African telcos are integrating unused 4G capacity as part of near-term strategies while eyeing the innovation-unlocking value that 5G will surely bring across industry verticals and consumer markets. A panel on Unpacking 5G Progress and Prospects in North Africa in November 2022, will put forth the argument that 4G performance is key for the future of 5G.

Highlights in terms of EdTech include

sessions such as a keynote panel titled Youth Empowered - Why Digital Education is the Key to Unlocking Africa's Potential; a must-attend discussion, especially considering that 60% of Africa's population is under the age of 25, spearheaded by experts such as Jomo Erik (the African Leadership Academy), Ifeyinwa Ugochukwu (the Tony Elumelu Foundation), Chris Fabian (Giga-UNICEF), Timothy Were (Ministry of ICT, Innovation and Youth Affairs, Kenya) along with Paula Gilbert (Editor of Connecting Africa).

AfricaCom 2022 will host a similar Keynote Panel at the same time, but with a focus on the importance of 4IR (Digital Skills Africa - Why an Educated Youth is Key to Unlocking the 4IR).

Further influencing where the world is headed, AfricaTech, will look at charting the impact from Africa's most exciting tech evolutions - Web3, The Metaverse ClimateTech, HealthTech, FinTech and beyond. AfricaTech will also host sessions that will unpack the biggest enterprize transformation topics, tech integration and business trends across sector - from AI to IoT.

Sustainable energy underpins everything - Increasingly important in any discussion around technology, connectivity, and economic security, is the energy to fuel it. The ICT sector has traditionally been a significant contributor to greenhouse gas emissions as data centres, for example, contribute to 2% of global GHG. The sector, therefore, also has a real potential to play a part in combating climate change and

taking steps to reduce energy consumption and operate more sustainably. Africa Tech Festival will host a Fireside chat: What is the role of Green ICT in combating climate change – on Tuesday 8 November- and one on Green ICT: Building a Continent powered by sustainable energy as a route to affordable and reliable electrification for all.

The Tech in Action stream will explore the effect of disruptive technologies in two of Africa's vital sectors with the most potential for transformative change - Agriculture and Healthcare - and for very good reason given that agriculture represents up to 30% of the GDP in Sub-Saharan Africa and sustains up to 70% of livelihoods on the continent.

A tech-enabled agricultural revolution in Africa would be truly transformative for the continent, and agriculture e-solutions are set to see exponential growth in the next 10 years. Through empowering small-scale farmers to access digital marketplaces and offering technologies to produce more with less, means truly transforming lives and building food security for the continent.

The importance of innovation in the healthcare industry has come to the forefront with the shared global experience of the Covid-19 pandemic. Technology is a critical piece of the puzzle in transforming this sector and providing more accessible services. This stream will deliver key innovations on the continent - from telemedicine, IoT and patient monitoring, drone, and other hardware developments.∎

Slovak Telekom renews Premium Content Delivery with Intelsat

Intelsat, operator of one of the world's largest integrated satellite and terrestrial networks and leading provider of inflight connectivity (IFC), has agreed to a multi-year renewal for a managed service and network extension with Slovak Telekom.

The service provides Pay-TV distribution to viewers in Central and Eastern Europe. Slovak Telekom is the largest multimedia operator in Slovakia and a major operator in neighboring countries providing a variety of services ranging from digital and cable television, mobile communication and fixed network services.

The multi-year agreement provides Slovak Telekom with a robust managed solution to deliver content from Bratislava to Intelsat's Fuchsstadt teleport in Germany where it is distributed to millions of homes. The extension demonstrates the critical role the 1West multi-satellite "neighborhood" plays to reach viewers across Central and Eastern Europe.

The solution consists of space capacity on the 1West neighborhood, IntelsatOne fiber, and uplink services. The extension of the IntelsatOne fiber network to Bratislava allows Slovak Telekom to hand over its content seamlessly to Intelsat with the certainty that it will reach viewers' homes with the highest levels of quality and reliability.

"This agreement and network upgrade demonstrates Intelsat's commitment to providing Slovak Telekom with the world-class, managed solutions they need to

Rhys Morgan - *Intelsat VP & GM, EMEA Media and Networks*

distribute quality video to viewers across Central and Eastern Europe," said Rhys Morgan, Intelsat Vice President and General Manager, EMEA Media and Networks.

Intelsat has been providing Slovak Telekom with reliable service since 2012. This renewal will continue to ensure the highest level of service needed for current distribution while also providing the flexibility to accommodate growth.

"Intelsat's managed solution enables us to focus on the needs of our end customers and on providing the strongest channel lineup in the region, rather than managing an extensive, complicated network," said Marcel Šatánek, Senior Manager for TV and Entertainment Unit, Slovak Telekom.

The 1West neighborhood is a multi-satellite solution distributing content to cable operators, IPTV headends and directly to millions of homes (DTH). The top five DTH platforms in the region are located on 1West, along with leading international programmers. 1West reaches more than 9 million viewers across its footprint. ∎

Aftab Raza Khan

KSA continues to embrace the Digital Transformation goals of Vision 2030

After a gap of two years, the IDC Saudi Arabia CIO Summit returns to an in-person format in Riyadh as the Kingdom continues its rapid transformation towards a digital economy in alignment with the goals of Vision 2030.

Hosted under the theme 'Accelerating the Journey to a Digital-First World', the highly anticipated 12th annual IDC Saudi Arabia CIO Summit will combine a series of presentations, panel discussions, real-life use cases, and individual technology tracks. Delegates will be able to explore a broad range of themes central to their ongoing digital journeys and take an exclusive look at the very latest developments in technological innovation.

"As Saudi organizations tap into the value-creation opportunities being driven by digital transformation (DX), they are increasingly embracing a digital-first approach to building resilience

into their business operations," says Hamza Naqshbandi, IDC's Associate Vice President for Saudi Arabia and Bahrain. "Spurred by significant investments in the creation of new customer experiences, digital ecosystem-based business models, digital supply chains, and evolving 'Future of Work' models, the Kingdom is poised to become a global digital powerhouse. These themes will shape discussions at this year's IDC Saudi Arabia CIO Summit — a trusted platform that connects leading ICT executives to help unleash new opportunities and solve some of the most pressing challenges that organizations are facing in their quest to enable a digital economy in Saudi Arabia."

The annual IDC Saudi Arabia CIO Summit is the place to come for thought-provoking, in-depth discussions about cutting-edge tech solutions, emerging use cases, and proven strategies for driving success.

This year's installment will conclude on September 20 with the IDC Excellence Awards 2022, which will recognize the efforts of Saudi Arabia's leading technology executives across three categories: CIO of the Year, CISO of the Year, and Women in Technology and Business.

IDC is honored to have a wide range of partners on board for the IDC Saudi Arabia CIO Summit 2022, including IBM as Host Partner; SITE as Game Changer Partner; Unifonic as Innovation Partner; Tech Mahindra as DX Partner; Red Hat as Smart ICT Partner; Cisco as Strategic Partner; AWS, Cloud4C, Google Cloud, Riverbed / Starlink, UiPath, Software AG, CEQUENS, and Microsoft as Summit Partners; Micro Focus, SS&C Blue Prism, Fortinet, VMware, Mendix, SBM, and AMD as Platinum Partners; Kofax, Udacity, Nexthink, Crayon, Cloudera, Snowflake, Nahil Computers / HPE, and Symphony Summit as Technology Focus Group Partners. ∎

PCCW Global collaborates with Syntropy to deliver network on demand through Web3 Open Bandwidth Exchange

PCCW Global, a leading international telecommunications service provider, is collaborating with Syntropy, a Web3 network software company, to deploy and operate Syntropy's Distributed Autonomous Routing Protocol ("DARP") nodes at strategic locations within the PCCW Global network.

Syntropy clients will pay to use routes identified by PCCW Global's DARP nodes as the best paths, allowing the provider to monetize unused bandwidth. Up until now, network operators have been unable to generate revenue from under-utilized links across their network. Syntropy and PCCW Global's collaboration represents a major step forward towards establishing an industry standard settlement layer for bandwidth on demand.

Web3 application developers, network infrastructure engineers and technical application owners can purchase network services on demand through an API. Transparent usage based pricing marks a fundamental shift towards Web3 and away from legacy business models that create market inefficiencies. Domas Povilauskas, Co-founder & CEO of Syntropy, said, "This collaboration marks a tectonic shift as major enterprize s begin adopting blockchain-based solutions and realize their immense potential. By joining forces with PCCW Global to build the Open Bandwidth Exchange ("OBX"), we will dramatically improve the public Internet, enabling businesses to get the fastest, most reliable paths between their data centers."

Syntropy's technology is one of the few use cases of Web3 that have true utility and widespread enterprize use cases. OBX is unlocking previously untapped bandwidth potential to prepare the Internet for the demands of VR, AR and the metaverse. The infrastructure built by PCCW Global will become a key part of Syntropy's OBX, allowing companies to purchase bandwidth on demand in the fastest, most cost-effective way. Paul Gampe, CTO of PCCW Global, said, "We are excited to collaborate with Syntropy and deploy DARP nodes across our network. This collaboration allows us to provide Syntropy clients with best-in-class bandwidth on demand and increase monetization of our global infrastructure". ∎

Paul Gampe
Chief Technology Officer, PCCW Global

Domas Povilauskas
Co-founder & CEO, Syntropy

C-Level meeting at STARCOM Pavilion during ITCN ASIA 2022

STARCOM Group: Transforming the business of networking

Starcom Group is a leading, regional Systems Integration and digital transformation solutions provider that supports its client's pursuit of operational excellence and profitability. With over 15 years of operational experience, hundreds of projects delivered, and rational capital that spans multiple industry sectors including wireline operators, cellular operators not only in Pakistan and Afghanistan but also in the Middle East region. Starcom's team of trained technology experts are fully capable of integrating and delivering innovative consulting, business, and technology solutions with a commitment to excellence and client satisfaction. Starcom is acknowledged as one of the Pakistan's most capable Infrastructure Solution providers. They have successfully delivered hundreds of infrastructure projects.

For organizations to achieve their strategic business goals in a continuously-evolving and highly competitive marketplace, it has become inevitable for them to adopt robust, highly scalable, readily available and responsive integrated systems that enable processes. Deploying versatile, reliable, and highly secure ICT infrastructures to host and run business solutions has become increasingly compelling, but implementing and managing such sophisticated ICT infrastructure setups is being a tedious job for most organizations.

By leveraging its wide spectrum of solutions, highly trained human capital, global network of technology partners, and robust value-chain, Starcom provides clients across a spectrum of sectors with the expertise, cutting-edge technologies, best ICT practices and processes, and the after-sales support services they need. They guarantee the highest levels of efficiency, effectiveness, scalability, and business sustainability. Their cumulative experience has grown continuously through the management and implementation of their projects in Pakistan, Afghanistan and throughout the Middle East region.

Smart Future:

Starcom is actively working for Telco Operator to join their hand for Smart Future OPEN NETWORKING SOLUTIONS. Proudly working for big Players of Technology for Below Open Networking Segments. They are ready to make it true for MEA market.

1) Open Networking Wi-Fi (SDN Cloud Controllers) & Open WAP's

2) Open Networking Optical Transport (OTN) & Open Packet Transport (PTN)
3) Open Networking OLT's (GPON/FTTH Solution)
4) Open Networking Wireless Network (ORAN)
5) Open Networking Small Cells for 4G/5G
6) Open Networking Cell Site/Router & Cell Site Gateways
7) Open Networking L2/L3 Data Center Switches up to 400G

Their Infrastructure Solutions Offerings include:

•Telecommunication & Networking Solutions(OTN, FTTH, PTN, Wireless Transmission)
•Networking Solutions (Routers, Switches, Firewall, WiFi, VoIP & NMS)
•Smart Cities/Safe Cities & Security Solutions
•Open WIFI (TIP/Open Networking Platform)
•Disaggregated Cell Site Gateways/OLT/ Optical Packet Transport & Data Center Switches.
•Data Center Solutions (Active & Passive)
•Mobile BBU Fronthaul & Backhaul Solutions using OTN/PTN & IP-MPLS, Metro Fiber Solution with Clock like 1558V2, Synch-E etc
•3G/4G/LTE & 5G Tower Fiberization Solution, Outdoor & Industrial Grade
•5G OpenRAN, Software Define Open vRAN & 5G networks with 5G-native architecture
•Small Cells & 5G IDU & ODU CPE's for MNO's
•Carrier Grade Dual WAN port Layer 3 LTE ROUTERS (industrial Grade)
•4G LTE Mobile Backhaul over MPLS
•Test & Measurement Solution from 1Mbps to 400G, Spectrum Analyzer, QoE
•SCADA, IoT, M2M, SDN/NFV & SD-WAN Solutions
•MEF CE2.0 Access and Aggregation Mobile Backhaul Solution
•4G & 5G CPE's i.e. 5G Routers, 5G Access Points solutions.
•Telecom DC Power & Data Center Precision Cooling Solutions.∎

AYRUS, the global leader in advanced surveillance and security solutions, has signed a distribution contract with STARCOM Technologies for the distribution of their products in Pakistan. The deal was signed during the 21st ITCN ASIA EXPO held in Karachi, Pakistan recently.

Eutelsat appoints Laurence Delpy and Cyril Dujardin as GMs

Eutelsat Communications has announced the appointment of Laurence Delpy as General Manager of the Video Business Unit and Cyril Dujardin as General Manager of the Connectivity Business Unit. These two appointments are at the core of Eutelsat's telecom pivot, which will be further strengthened by the combination of Eutelsat and OneWeb announced in July. The creation of two business units (BUs) will enhance customer-centricity, boost efficiency and foster growth. Laurence Delpy and Cyril Dujardin join Eutelsat's Executive Committee as of 29 August 2022

> *"Both will have the mission of structuring and developing our two Video and Connectivity Business Units in a fast-growing global market".*
>
> *Eva Berneke - CEO, Eutelsat*

Cyril Dujardin - GM of the Connectivity Business Unit, Eutelsat

and 10 October 2022 respectively.

Throughout her global career, Laurence Delpy has lived and worked in Asia for most of her professional life, including Singapore and China, where she has put her customer eccentricity to good use by addressing markets with different maturities and cultures. A tech enthusiast, Laurence has held leadership positions in the telecom industry, including driving R&D teams and demonstrating her ability to collaborate and engage with teams with highly diverse profiles.

She also has a robust experience in managing P&Ls in challenging environments, having addressed technological changes in the mobile telecom segment, while successfully creating value in structurally eroding businesses. Laurence comes to Eutelsat from Palo Alto Networks, a global cybersecurity leader, where she served as Vice President of the EMEA Service Provider business.

Cyril Dujardin has extensive international experience in the Tech industry (smart cards, biometrics, cybersecurity, artificial

Laurence Delpy - GM of the Video Business Unit, Eutelsat

intelligence). He has headed complex organizations experiencing various business cycles, from growth to performance improvement to turnaround. Most recently, he has managed full P&Ls covering a large array of products and services. Cyril will be joining Eutelsat on the 10 of October from Atos where he holds the position of Deputy Head of the Big Data and Security Business line.

Michel Azibert, Eutelsat Deputy CEO, will act as interim General Manager for the Connectivity Business Unit, pending Cyril Dujardin's arrival.

Commenting on these announcements, Eutelsat Chief Executive Officer Eva Berneke said: "Both Laurence and Cyril will have the mission of structuring and developing our two Video and Connectivity Business Units in a fast-growing global market. These BUs will build a unique service offering that will be further reinforced by our combination with OneWeb. I am confident that Laurence and Cyril have the strategic vision and operational capabilities to successfully take on these challenges in order to best address the large spectrum of our customers' needs." ∎

PTN, IP RAN, OTN, MSAP, WDM

xPON

3G, 4G, 5G SMALL CELL

SDN/NFV, vCPE, Cloud Application

Carrier Ethernet Switch, Industrial Switch/Routers

Telecommunication & Networking Solutions

1. Open Datacenter Solutions

- Enterprize SoNiC Solutions
- Datacenter Interconnect Solution
- Open Networking Solution for Open Cloud Switches
- Driving Next Generation Datacenters toward 400G

2. Open Networking Path

- Open Optical Transport Network 100G/200G
- Open Packet Transport Network
- Open RAN (ORAN)
- Open WiFi

3. Disaggregated Path

- Disaggregated OPTICAL LINETERMINALS – OLT
- Disaggregated Cell Site Gateway Family for Mobile Backhaul Applications
- Disaggregated & Open BNG & DCSG Network Solution
- Disaggregated Small Cells

Starcom Technologies (Pvt) Limited

Email: ali@starcom.com.pk , **Cell/WhatsApp:** + 923212021141

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KTSAT contracts with Satconsult to provide expert oversight of Satellite

Euroconsult has announced that its affiliate, Southern Aerospace & Telecom Consulting (Satconsult) has contracted with KTSAT to provide expert oversight throughout the build of Koreasat 6A satellite. The contract marks the third time that KTSAT will put its trust in Satconsult's depth of expertise to support the monitoring and control of the manufacturing process and advise on best practices from design through testing of highly strategic spacecrafts.

"We are delighted to extend our long-standing working relationship with KTSAT," said David Chégnion, Managing Director, at Satconsult. "Under the multi-year agreement our highly qualified international experts will monitor the construction of an advanced satellite built on the Thales Alenia Space Spacebus 4000B2 platform."

KTSAT selected Thales Alenia Space to design and build the Koreasat 6A satellite, and Satconsult will support KTSAT onsite in Toulouse and Cannes to monitor day-to-day activity and assure the success of this satellite program. Koreasat 6A is designed to replace the current Koreasat 6 satellite at 116° East, it will deliver both fixed satellite services (FSS) and broadcasting satellite services (BSS) to South Korea.

Satconsult is a multi-disciplinary consulting firm that joined with Euroconsult in 2016 to establish a global team of experts providing end-to-end capability to the satellite industry. Among its services, the company monitors the progress of the design, construction, integration and test of satellites, and its resident engineers validate the manufacturer's work and quality practices and provide recommendations that result in the delivery of more reliable spacecrafts.

"The experts at Satconsult have our full confidence in helping us realize this highly strategic satellite program," said Kevin Choi, Chief Technology Officer at KTSAT. "Having worked together on two previous satellite construction projects, we know we can rely on Satconsult for its expertise, flexibility and high-quality service."

Koreasat 6A will be based on the Spacebus 4000B2 platform from Thales Alenia Space, it will be fitted with six BSS transponders and 20 FSS transponders covering South Korea. Satconsult will support the construction process through its projected launch in the fourth quarter of 2024, until the delivery on-orbit.∎

David Chégnion - MD, Satconsult

iPhone today accounts for almost 50% of all smartphones used in the US

Smartphones are a big part of our lives, and their usage has only grown in recent years. In fact, according to a new report from StockApps.com, iPhone now accounts for 50% of all smartphones used in the US. The data shows the iPhone surpassed Android's market share. The growth means Apple has a competitive edge over its main rival even as it expands into new ventures like finance and healthcare.

Edith Reads from StockApps.com shared her sentiments on the data. She said, "iPhone has always been a popular choice among American consumers, but this data shows just how much its dominance has grown in recent years".

"Each quarter, there have been more shifts from Android to iOS in the US. Apple has always made adjustments to launch a new series every year around September. Therefore its brand remains effective and updated. With the US success, other countries might also follow the pattern."

Inspecting the Past

As for Android, the first Android-powered smartphone hit the market in 2008, a year after the introduction of the iPhone. Apple has never come close to 50% market share, primarily due to the success of Android phones such as Samsung, Nokia, Motorola, and BlackBerry.

The iPhone is mainly responsible for Apple's rise to the top of the corporate world. A $2.5 trillion market cap results from the company's success. Apple reported $83 billion in sales for the quarter ending in June.

A significant number of people switched from Android to iOS in June, Apple CEO Tim Cook said on an earnings call following the Q3 22 report. Cook says that the success is due to excellent customer satisfaction and 5G.

The newest generation of iPhones was unveiled by Apple during their Far Out media event on September 7. Additionally, the Series 8 Apple Watch is widely

anticipated to debut.

Apple's future looks bright. It is interesting to watch how things unfold in the smartphone sector. Apple might hold the largest share through the final quarter of 2022.

iPhone, the American pride

Several factors contribute to the United States' relative success of Apple's flagship iPhone. In the smartphone industry, Apple enjoys the highest levels of brand loyalty. Most iPhone owners in the United States want to upgrade to another iPhone. Besides, iPhones lose value at a slower rate than competing products.

The cost of Apple does not strain most American shoppers. They hold that quality justifies the price, so most consumers go for it.

Apple has been quite outspoken in its commitment to user privacy and data security, which seems to resonate with its target audience.∎

GLOBAL ICT, TELECOM & SATCOM EVENTS 2022 - 23

04-05 October 2022	07-09 December 2022	23 - 24 May 2023
Nairobi, Kenya	Marina Bay Sands, Singapore	Dubai, UAE

10-14 October 2022	27 Feb - 02 March 2023	30-31 May 2023
Dubai, UAE	Barcelona, Spain	Dubai, UAE

18-20 October 2022	06 - 09 March 2023	06-08 June 2023
Seoul, Korea	Dubai, UAE	Manama, Bahrain

02-03 November 2022	13 - 16 March 2023	07-09 June 2023
Riyadh, Saudi Arabia	Washington, DC	Singapore

07 - 11 November 2022	14 - 16 March 2023	15-18 September 2023
Cape Town, SA	Dubai, UAE	Amsterdam Netherlands

08 - 10 November 2022	10 - 12 May 2023	06 - 08 Dec 2023
London, UK	Dubai, UAE	Baku, Azerbaijan

GLOBAL DEV SLAM

× مقر المبرمجين coders(hq) × PYCONMEA

10 - 13 OCT 2022
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60+
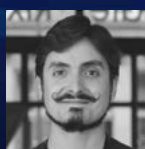industry pioneers & tech geniuses

TECH PIONEERS ON STAGE

Travis Oliphant
Creator of NumbPy & Co-Founder
ANACONDA. USA
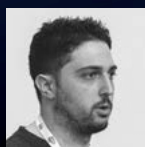
Sebastian Ramirez Montano
Creator
FastAPI Germany

Ketan Umare
Co-Creator of Flyte, Co-Founder & CEO
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Pablo Galindo Salgado
Physicist & Software Engineer - R&D Python Infrastructurea
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