



Introductions and Welcome & TFI News and Overview

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TFI 2016

January 21-22, 2016

Marriott Courtyard Downtown
Austin, Texas

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- Welcome and Introductions
- Lunch and Reception
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Developments of Note since TFI 2015

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NETWORKWORLD

Inside AT&T's grand plans for SDN

Frame relay and ATM go away as the company virtualizes more functions. A Q&A with the man driving the transformation.



By John Dix | [Follow](#)

Network World | Jan 8, 2015 7:16 AM PT



AT&T spends some \$20 billion per year on capital expenditures, the bulk of that on its massive network, and recently announced a bold plan to adopt Software Defined Networking and Network Function Virtualization in a big way. Network World ...caught up with AT&T Senior Vice President of Architecture & Design Andre Fuetsch for a deeper dive on the grand plan.

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Our objective is to virtualize and control over 75% of our target network under our Domain 2 architecture by 2020. Of course there are parts of our network that we consider legacy that we're going to migrate off of or retire. Those aren't part of what we define as our target network, so we wouldn't try to virtualize some of those older TDM-based products and services. That doesn't make any sense since we're moving to IP, so it's really more about virtualizing the network functions that we see a future for.

[I]n the voice world ...some of those old Class-5, Class-4 switching architectures, and an example in a data context would be ATM and frame relay. Those networks are also going away.

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In terms of getting there, is this going to require forklift upgrades of existing infrastructure or can you tweak some of that to work in this new environment?

I think it's going to be both. In some areas, some of the upper layer services were architected for the cloud. Those will be easier to tweak. Technologies that traditionally have been built on a proprietary stack from the hardware up, those will have to likely be forklifted out.

Sounds like exciting times.

It really is. I would say this is probably the most revolutionary change I've seen in my career for all the reasons we just talked about.

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Alcatel-Lucent technology to shatter capacity limits of optical networks as they prepare for massive future data demands

Paris, France, November 19, 2015

Bell Labs...has made a breakthrough in its ambition to shatter the capacity limits of optical networks as they strive to meet the explosion in traffic expected from 5G and the Internet of Things.

...[T]elecommunications operators and enterprises are witnessing rapid network data traffic growth at cumulative annual rates of up to 100 percent....Bell Labs estimates that, within about a decade there will be an acute need for commercial optical transport systems capable of handling Petabit-per-second capacities.

...Bell Labs' pioneered MIMO-SDM technique has the potential to increase today's 10 to 20 Terabit-per-second fiber capacities to Petabit-per-second capacity - the equivalent of 1,000 Terabits/s

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AT&T Completes Acquisition of DIRECTV

*Becomes World's Largest Pay TV Provider and Video Distribution
Leader Across TV, Mobile & Broadband*

DALLAS, TEXAS – July 24, 2015 — **AT&T Inc.** (NYSE:T) has completed its acquisition of DIRECTV. The newly combined company – the largest pay TV provider in the United States and the world – will offer millions of people more choices for video entertainment on any screen from almost anywhere, any time.

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AT&T bringing gigabit fiber to LA and dozens of other metro areas

AT&T gigabit fiber on track for 14 million homes and small businesses.

by Jon Brodtkin - Dec 7, 2015 3:50pm CST

AT&T today launched its gigabit fiber Internet service in parts of Los Angeles and West Palm Beach and announced another 36 metro areas that will get the service at later dates. AT&T's "GigaPower" service is available in 20 metro areas as of now... It launched first in Austin, Texas, in 2013.

...AT&T agreed to deploy fiber to at least 12.5 million customer locations within four years in exchange for government approval to buy DirecTV. ...AT&T will end up building to more than 14 million homes and small businesses.

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Where is U-verse® with AT&T GigaPowerSM?

Search for GigaPower cities



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NETWORKWORLD

How Comcast will roll out gigabit-speed broadband in 2016

With a successful test of a DOCSIS 3.1 modem, Comcast is set to embark on its new plan to offer gigabit-speed internet service.

By Colin Neagle

Network World | Dec 22, 2015 7:54 AM PT



Comcast has made a breakthrough that could enable it to offer gigabit-speed broadband to its existing network without going through the exhaustive, and expensive, process of building out a new fiber network. Through this process, Comcast said it will offer a new gigabit-speed service by the end of 2016.

The DOCSIS standard increases the amount of data that can be transferred over existing cable TV systems, with version 3.1 capable of boosting speed to 10 Gigabit-per-second (Gbps) downstream and 1 Gbps upstream.

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The Google Corner

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Official Blog

Insights from Googlers into our products, technology, and the Google culture

Say hi to Fi: A new way to say hello

April 22, 2015

...Project Fi enables us to work in close partnership with leading carriers, hardware makers, and all of you to push the boundaries of what's possible. By designing across hardware, software and connectivity, we can more fully explore new ways for people to connect and communicate. Two of the top mobile networks in the U.S.—Sprint and T-Mobile—are partnering with us to launch Project Fi and now you can be part of the project too.

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myStatesman
from Austin American-Statesman

Google expands self-driving car project to Austin

Resize text A | A | A

Two Lexus self-driving vehicles are hitting the streets, with two humans on board each

Posted: 12:01 a.m. Tuesday, July 7, 2015

By Omar L. Gallaga - American-Statesman Staff

On Tuesday, Google is going public with a project some had already spotted around town in recent weeks: One of its self-driving cars, a Lexus RX 450h, has been driving and mapping here. With two humans on board.



Google's self-built prototype vehicle uses the same software and the same kinds of sensors as the Lexus hybrid self-driving vehicle that's ...
[Read More](#)

"We're really excited to come to Austin, and we hope that Austinites are excited about our project being there," confirmed Jennifer Haroon, head of business operations for the Google Self-Driving Car Project. The project began in 2009 and has made big strides in the last year. In December, the Mountain View, Calif., company unveiled a rounded, arch-shaped prototype the company built. The company's self-driving vehicles have

http://www.mystatesman.com/news/technology/google-expands-self-driving-car-project-to-austin/nmsct/?utm_source=Austin+EcoNewsletter&utm_campaign=15c07257a0-EN7%2F9%2F15_Google_%2B3_Solar_R4R_HH&utm_medium=email&utm_term=0_e376911220-15c07257a0-171065057f495d234.3914403.735788

Including Video:

<http://www.google.com/selfdrivingcar/>

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"Does your car have any idea why my car pulled it over?"

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The New Yorker, January 11, 2016

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TELECOM TV

Google sneaks home IoT hub disguised as WiFi router under the noses of sleeping telcos

By Guy Daniels

Internet of Things | 2 months ago | [Join the discussion](#)



Spot the home IoT hub? © Google

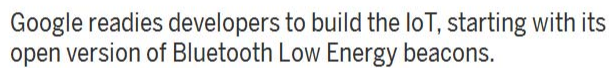
<http://www.telecomtv.com/articles/iot/google-sneaks-home-iot-hub-disguised-as-wifi-router-under-the-noses-of-sleeping-telcos-12754/>

- Google OnHub supports IEEE 802.15.4 standards
- Future hub for Thread, ZigBee and Bluetooth 4.0
- Full control via Smartphone app, and automatic software updates
- Telcos face a repeat of the app and messaging fiascos

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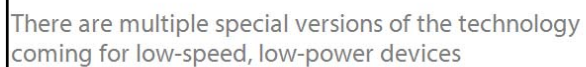
Google details its vision for the IoT



By [Steven Max Patterson](#) | [Follow](#)
Network World | Jan 12, 2016 1:17 PM PT

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LTE makes a full-court press on IoT



By Stephen Lawson [FOLLOW](#)

IDG News Service | Sep 1, 2015 5:39 PM PT

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Category 1 sat unused for a few years as machine-to-machine communications used the slow but cheap 2G and 3G networks that lived alongside LTE. Now carriers are taking steps to dismantle those networks, starting by reusing some of their frequencies for LTE.

Category 0 will take the trend another step further, with a target speed of 1Mbps both upstream and downstream. Whereas Category 1 is about 30 percent cheaper and more power-efficient than regular LTE, Category 0 will probably cut another 30 percent from that, said Craig Miller, vice president of engineering at Sequans. Major changes in Category 0 will include eliminating the requirement for two antennas and for sending and receiving data at the same time, he said.

After Category 0, the 3GPP is expected to craft yet another system with even lower speed and power needs.

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TELECOM TV

You're never alone, with a mobile drone

By Guy Daniels 

Vendors & OEMs | 7 months ago

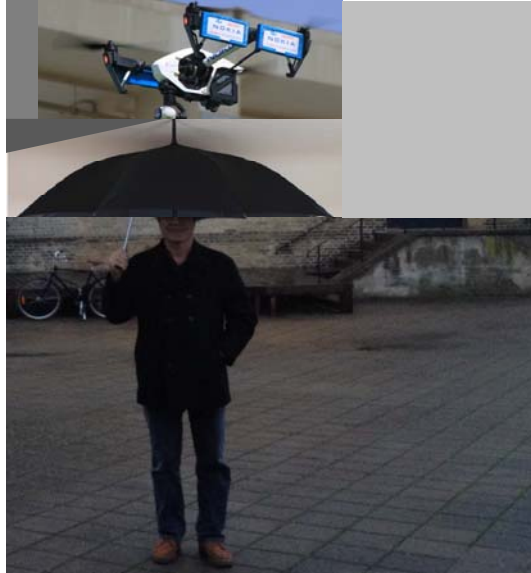


Nokia Networks and du employed drones carrying smartphones with network testing applications... Drones were also used for tower inspections, radio planning and line of sight testing between radio towers.

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Larry's Drone Umbrella



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Maybe not so much in Denmark



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TFI 2016

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This Morning

INTERNET OF THINGS AND BIG DATA

– *Host: Carrie Vanston, VP, Communications, Technology Futures, Inc.*

- 9:00 am **The Communications/Data Transformation that will Change ALL Our Ideas about HealthCare**
– *David Smith, President, SocialCare*
- 9:40 am *Break*
- 9:50 am **KEYNOTE: "Big Picture Enablers Fueling the IoT Explosion"**
– *Sujata Neidig, Americas Marketing Manager, NXP Semiconductors (Freescale recently merged with NXP)*
- 10:30 am **Smart Cities and the IoT -- Austin Looks Forward**
– *Stephen Elkins, CIO, City of Austin*
– *Bert Haskell, CTO, Pecan Street, Inc.*
– *Ruben Miranda, Director, Duff & Phelps (Moderator)*
- 11:20 am *Break*
- 11:30 am **Precision Agriculture and Petroleum: Opportunities for Rural and Urban Communications Providers**
– *Sam Harlan, P.E., VP Engineering Consulting, CHR Solutions*
- 12:05 pm **Big Fast Data, Cognitive Computing, the Cloud, IoT, and Software Defined Networks**
– *Lawrence Vanston, President, TFI*

This Afternoon

WIRELESS

- 1:30 pm **KEYNOTE: Millimeter Wave for 5G Cellular: Finding a New Spectrum Mother Load**
– **Robert Heath**, Professor of Electrical and Computer Engineering, The University of Texas at Austin
- 2:30 pm *Break*
- 2:40 pm **Cars Communicating? Automotive Applications of 5G and Millimeter Wave**
– **Robert Heath**, Professor of Electrical and Computer Engineering, The University of Texas at Austin
- 3:10 pm **Wireless Industry Panel**
– **Gary Wiggins**, Executive Director - Property Tax, AT&T
– **Stephen Yergeau**, Director, Property Taxes, T-Mobile
– **Mike Mupo**, Retired Director, Verizon
– **David Schneider** - Manager Property Tax, Sprint
- 3:55 pm **TFI Wireless Forecast Update**
– **Ray Hodges**, Senior Consultant, TFI

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Later This Afternoon

VALUATION ISSUES

- 4:15 pm **Technology-Driven Valuation Issues for Data Centers and Communications Networks**
– **Mike Mupo**, Retired Director, Verizon
- 4:40 pm **Measuring OTT Operations**
– **Ruben Miranda**, Director, Duff & Phelps
- 5:00 pm **Cruisin' for Confusion: Reproduction vs. Replacement Cost**
– **Charles Burkhart**, Senior Consultant, CostQuest (Moderator)
– **Carl Hoemke**, Managing Director, Correlation Advisors or
– **Jim Stegeman**, President, CostQuest
– **Jerome Weinert**, Principal & Director, AUS Consultants
- 5:45 pm *Day Ends*
- 5:45-7:15 pm **Reception – Roof Top (Onsite)**

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Tomorrow Morning

BROADBAND & VIDEO

– **Host: August Grant**, Professor, School of Journalism and Mass Communications, University of South Carolina

- 8:30 am **Communications Technology Update 2016**
– **August Grant**, Professor, School of Journalism and Mass Communications, University of South Carolina
- 9:00 am **Video and Broadband Forecasts in the Gigabit Era**
– **Lawrence Vanston**, President, TFI
- 9:25 am **The Broadband Desktop circa 2018: The Big Screen Comes Back**
– **Dub Dublin**, Dublinvention
- 9:50 am *Break*
- 10:00 am **Keynote: What's Down the Valley for Broadband and Video**
– **Sarah Lacy**, Founder, Editor-in-Chief and CEO, PandoMedia
- 10:50 am **Transforming the Local Exchange and HFC Networks**
– **Lawrence Vanston**, President, TFI

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Later Tomorrow Morning

- 11:25 am **Impacts of Video and Broadband Developments on Landline Networks -- Panel**
– **Jeff Binkley**, Director, Deloitte (Moderator)
– **Christian Altenburger**, Manager, Property Tax, Comcast
– **James Dombrowski**, Manager - Property Taxes, Verizon
– **Steven Ingram**, Property Manager, CenturyLink
– **Robert Strong**, Tax Director, AT&T
- 12:25 pm **Closing Remarks**
- 12:30 pm *Conference Ends*
- 12:30 pm **Box Lunch and Discussion**
- 1:20 pm *Lunch Ends*

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Communication Assets Outlook

Trends and developments impacting the technology assets of the communications industry

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 TFI Communications Technology Asset Valuation Conference • hmvmarek • Edit

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11th Annual TFI Communications Technology Asset Valuation Conference scheduled January 2016!

TFI Conference: Thurs-Fri, Jan 21-22, 2016

Thank you to everyone who made the 10th Annual TFI Technology Communications for Asset

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