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## The KIT – Knowledge & Information Technology

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### → Grace Hopper Celebration of Women in Computing

The Grace Hopper Celebration of Women in Computing is the world's largest gathering of women technologists. GHC 2018 will take place on September 26-28 in Houston. Scheduled keynote speakers are Justine Cassell, Associate Dean of Technology Strategy and Impact, School of Computer Science, Carnegie Mellon University; Jessica Matthews, Founder and CEO, Uncharted Power; and Padmasree Warrior, CEO and Chief Development Officer, NIO US.

Grace Murray Hopper (1906-1992) was a computing pioneer, a rear admiral in the U.S. Navy, and the co-inventor of COBOL, one of the first high-level computer languages. Together with Ada countess Lovelace, who worked with Charles Babbage in England in the 19th century, Grace Hopper is considered as a great early example of women's achievements in a male-dominated science and technology world.

### → Introduction to Network Security and Cryptography

According to the ACM, Sarhan M. Musa's book "[Network Security and Cryptography: A Self-Teaching Introduction](#)" features the latest material on emerging technologies related to IoT, cloud computing, smart grid, big data analytics, blockchain, and more... This practical resource is a definitive guide to the principles and techniques of cryptography and network security." ACM members can [read the book online](#) at no cost, others can buy it [on Amazon](#) (paperback or Kindle version).

The book probably contains too much probability theory in its early chapters vs. what is really needed to understand the rest. As is sometimes the case with ACM's SkillSoft books, there are some typographical errors and a general lack of serious copy-editing. The rendering of mathematical formulas in the online viewer is buggy, making large formulas too small to read. In spite of those defects, the content seems correct and useful for beginners.

### → Several Big Brothers Are Watching You

Intelligence agencies may be rivals when wanting to spy over each other's countries, but they are united when it comes to monitoring citizens' communications. The "Five Eyes" countries (USA, UK, Canada, Australia and New Zealand) [recently declared](#) that "privacy is not absolute," that they were encouraging "the voluntary cooperation of industry partners" but hinted that there could be actions, "legislative or otherwise," against those that do not cooperate. They also said that end-to-end encryption of messages should not be the norm, a statement that appears to be a shot across Apple's bow.

Of course, the main argument for these privacy limitations is to give law enforcement agencies the ability to monitor the conversations of suspected terrorists. Yet many of us don't like where these agencies' argument leads to. If end-to-end encryption is discouraged or even banned, and governments have a way to obtain the content of private messages for anti-terrorism purposes, then perhaps we don't have too much to fear today from the governments listed above -- but things can change; moreover, political opponents in other countries could be put at risk if their messages are intercepted and revealed.



IT & Knowledge Management

[www.cebe-itkm.com](http://www.cebe-itkm.com)

[info@cebe-itkm.com](mailto:info@cebe-itkm.com)

+1 415 870 ITKM

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## → Fresh News from the Industrial Internet Consortium

The IIC held its quarterly meeting in Chicago this past week, Sep. 10-13. The new vertical domain focus is Intelligent Transportation Systems (ITS). This of course is heavily slanted towards connected cars, but we also heard about a new testbed on "LTE for metros" (train-to-station communication, etc.) being developed by a consortium of Chinese public transportation organizations.

Other highlights from the meeting:

- John Deere, the manufacturer of heavy farm machinery, talked about using data to optimize every step of the farming process, including precision planting, irrigation and chemicals application.
- Real-Time Innovations gave a clear presentation of the challenges of electric "microgrids." For example, the supply from solar panels that flows back into the main grid can fluctuate rapidly. Real-time communication is required to adjust supply and demand fast enough to avoid problems such as voltage spikes.
- In the Track & Trace testbed, the first one the IIC launched several years ago, continued developments address the communication challenges of factories with a lot of metallic surfaces. Ultra Wide Band (UWB) has been successful in such environments. Ultrasound triangulation has also been used to geolocate process tools down to a precision of 3 mm.

## → Seen Recently...

*"Almost half of US cellphone calls will be scams by next year."*

-- First Orion, in a [Sep. 12 report](#) that says scam calls went from 3.7% in 2017 to 29.2% in 2018, and will rise to 44.6% in 2019