

WinnForum Tech Talk Webinar Series Presents:

A Celebration of the 150th Anniversary of the Birth of Guglielmo Marconi

Presented by the WinnForum and the Marconi Society

April 25, 2024

8-9:30 am PT/11am-12:30pm ET



The Marconi
Society



A Celebration of the 150th Anniversary of the Birth of Guglielmo Marconi

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JOINT WEBINAR
WIRELESS INNOVATION FORUM AND THE MARCONI SOCIETY

25 APRIL, 2024

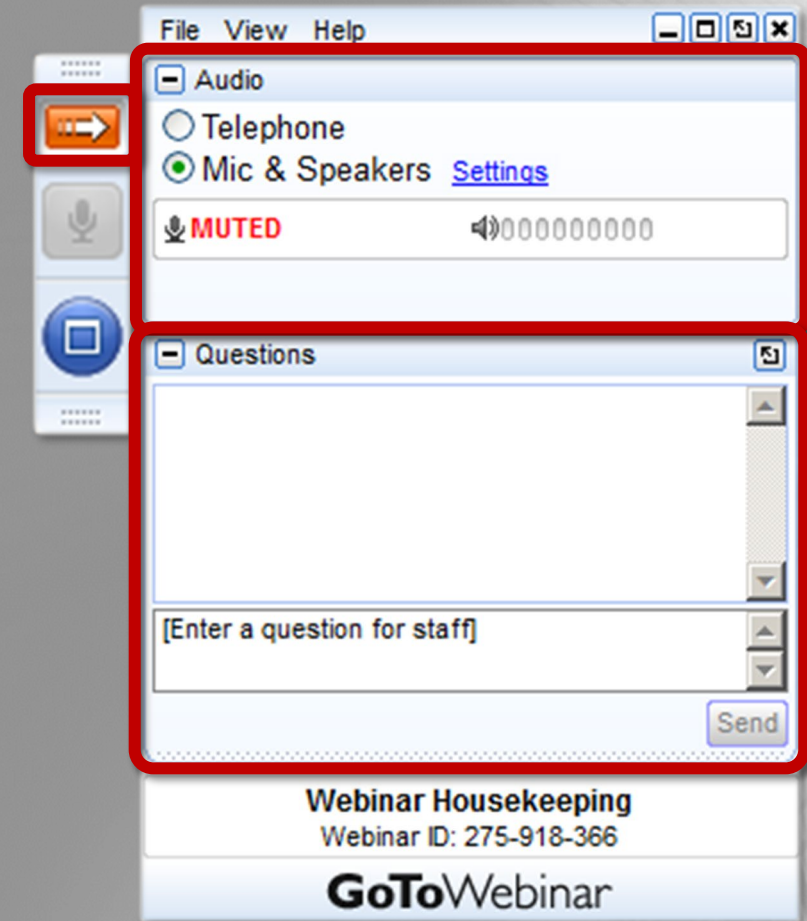


A Celebration of the 150th Anniversary of the Birth of Guglielmo Marconi

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Webinar Administrivia

- Slides presented during this webinar will be posted here:
 - <http://www.wirelessinnovation.org/webinars>
- Recorded Webinar will be available on the Forum's You Tube Channel:
 - <https://www.youtube.com/c/TheWirelessInnovationForum>
- Email Lee.Pucker@wirelessinnovation.org if you need more information



With: **Giulia Fortunato**
President, Fondazione Guglielmo Marconi

Dr. Joe Mitola, ENSCO
Creator of Cognitive and Software-Defined Radio
Professor Marc Raboy
Prof. Em., McGill University;
author of Marconi: The Man Who Networked the World
Professor Dennis Roberson
Chairman of the Marconi Society

Moderated by:
Dr. Andrew Clegg, Google, WinnForum CTO
and
Dr. Barry Sullivan, Director of Program Development, Marconi Society

Agenda (1 of 2)

- Welcome
 - Lee Pucker, [WInnForum](#) CEO
 - Dr. Barry Sullivan, [Marconi Society](#), Director of Program Development
- Introduction
 - Andrew Clegg, [WInnForum](#) CTO
 - Dr. Barry Sullivan, [Marconi Society](#), Director of Program Development
- Introductory Remarks (pre-recorded)
 - Giulia Fortunato, President, [Fondazione Guglielmo Marconi](#)
- Demonstration Video of Marconi's Experiment from the Marconi Museum
 - Narrated by Barbara Valotti, Marconi Museum Curator, featuring Giovanni Sandri, Lab Tutor

Agenda (2 of 2)

- Perspectives on the Origins and Commercialization of Marconi's Inventions (pre-recorded)
 - Prof. Em. Marc Raboy, McGill University; author of [Marconi: The Man Who Networked the World](#)
- How Wireless Technology has Evolved Since Marconi
 - Prof. Dennis Roberson, Chair, [The Marconi Society](#)
- Thoughts on the Future of Wireless Technology
 - Dr. Joe Mitola, Chief Technologist for the [ENSCO](#) Mission Systems Group
- Conversation and Q&A

The Marconi Society

Mission & Programs

History

The Marconi Society is a U.S.-based 501c3 nonprofit organization dedicated to fostering innovation and creativity in information and communications technology.

- Dedicated to recognizing and promoting those that contribute significant advancements in communications and information technology.
- Named in honor of the visionary scientist Guglielmo Marconi, the organization was founded by his daughter, Gioia Marconi Braga, in 1974.



Mission & Vision

Mission

The Marconi Society encourages and celebrates innovators who push the technical, creative, and entrepreneurial boundaries of information and communications technology for the benefit of humanity. We pursue this goal through prestigious awards, events, and programs.

Vision

The Marconi Society envisions a connected world where information and communications technologies empower everyone to reach their full potential.

Marconi Society Programs

Marconi Prize

The Marconi Fellows are some of the most respected engineers in the world. Many work actively to bring the opportunities of connectivity to everyone. They have changed our lives by creating an Internet that is available, accessible, secure, and useful and putting its power into the hands of billions of people.



Paul Baran Young Scholar Awards

The Marconi Society Paul Baran Young Scholars are emerging leaders in information and communications technology, selected from the most promising young researchers around the world for their innovation, leadership, and focus on technology to benefit humanity.



Marconi Society Programs

DIGITAL INCLUSION TRAINING

An online course designed to equip leaders with the skills required to extend the advantages of broadband access to everyone.

NATIONAL BROADBAND MAPPING COALITION

The nation's only neutral coalition dedicated to open, transparent, and verifiable broadband coverage data. We bridge insights and expertise from organizations and individuals in digital inclusion, technology, research, and policy.

Through these programs, the Marconi Society fosters innovation, inspires future generations, and promotes positive social impact globally.

Become a Marconi Society Member

Networking Opportunities

Access to member-only networking invitations, including virtual events with Marconi Society Board and Fellows

Event Advantages

Preferential rate for events tailored for our members: Award Galas, seminars, interactive workshops, and expert-led panel discussions

Magazine Feature

Exclusive opportunity to be featured in the Marconi Signal magazine that showcase your insights, experience, and contributions.

Monthly Newsletter

Stay at the forefront of technological advancements and innovations.

Contact Yeimidy Lagunas at ylagunas@marconisociety.org for more information.

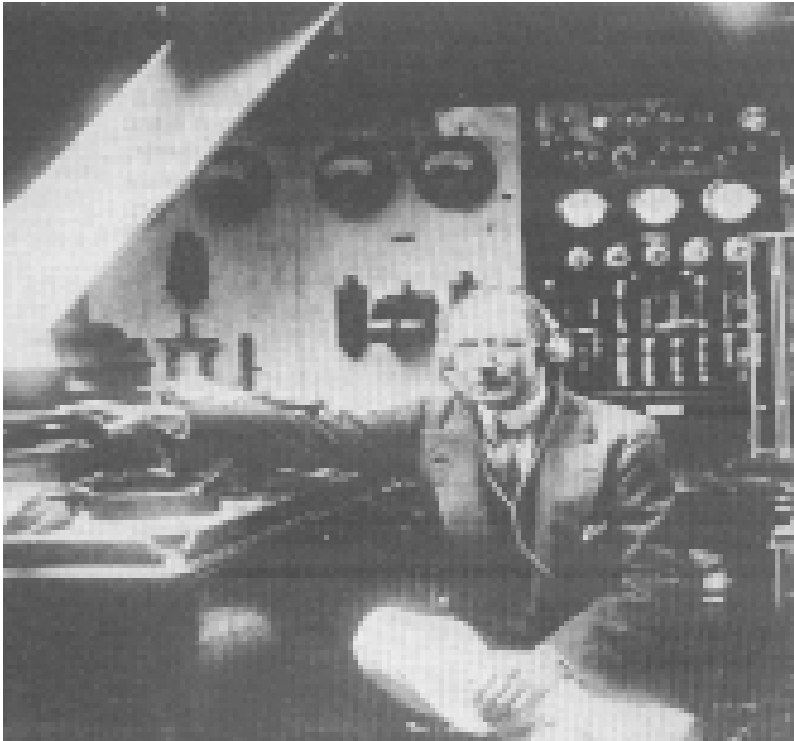
The Marconi
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Thank you!

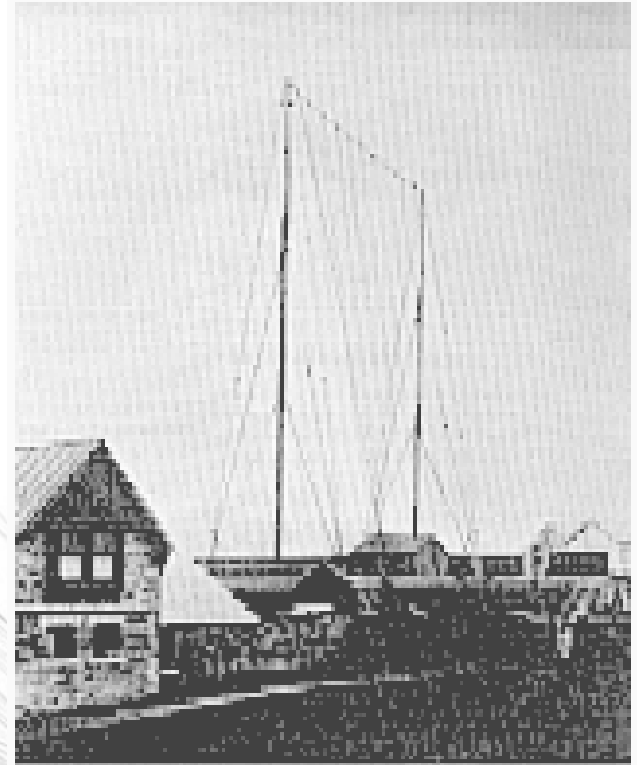
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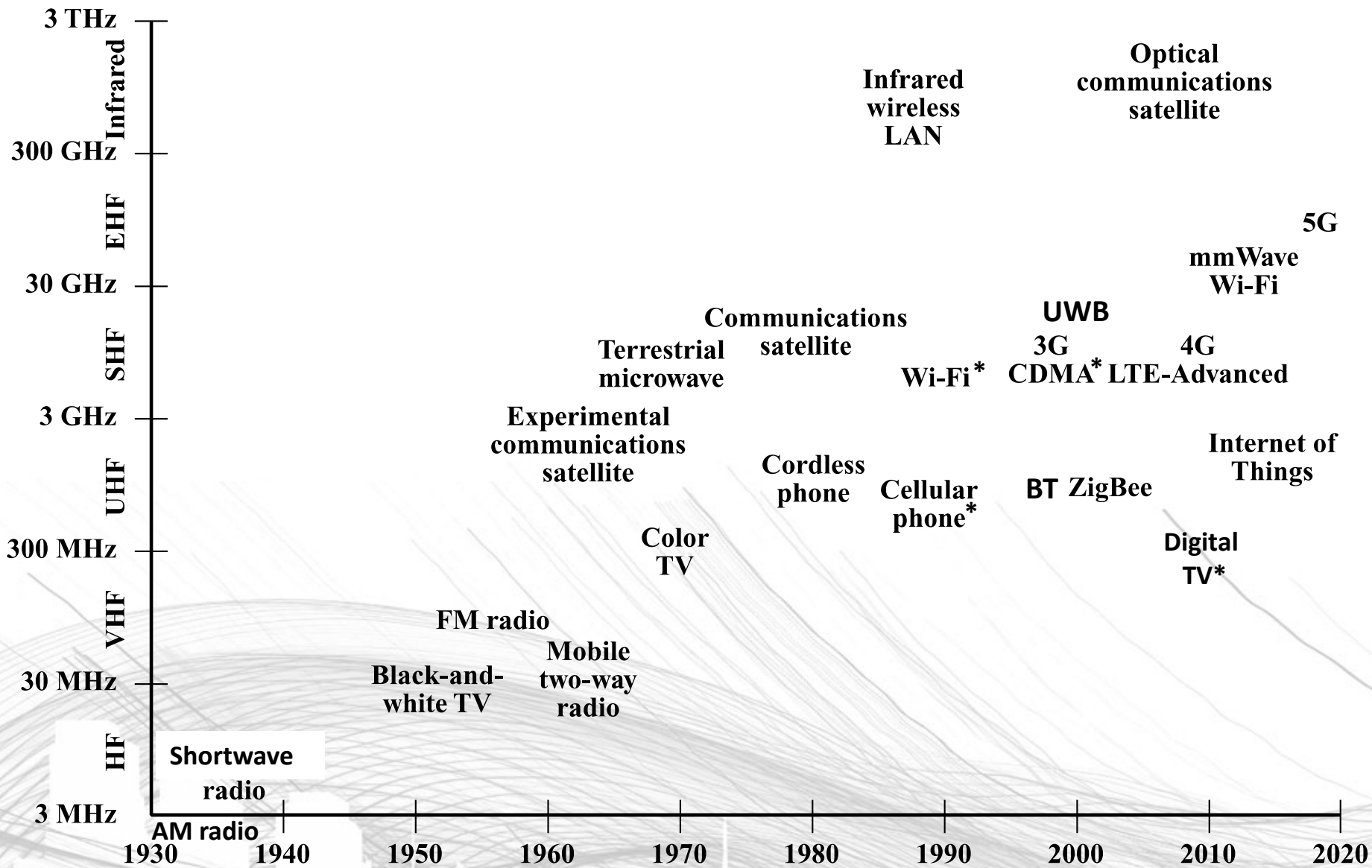
EARLY WIRELESS TELEGRAPH



Marconi *in one of his early commercial stations. 1899*



Marconi's antenna farm at Poldhu, England.



SELECTED WIRELESS COMMUNICATIONS MILESTONES

Adapted from Wireless Communications & Networks, 2nd Edition – William Stallings

UNITED STATES FREQUENCY ALLOCATIONS

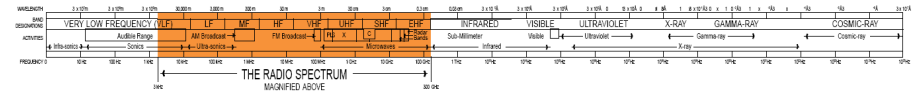
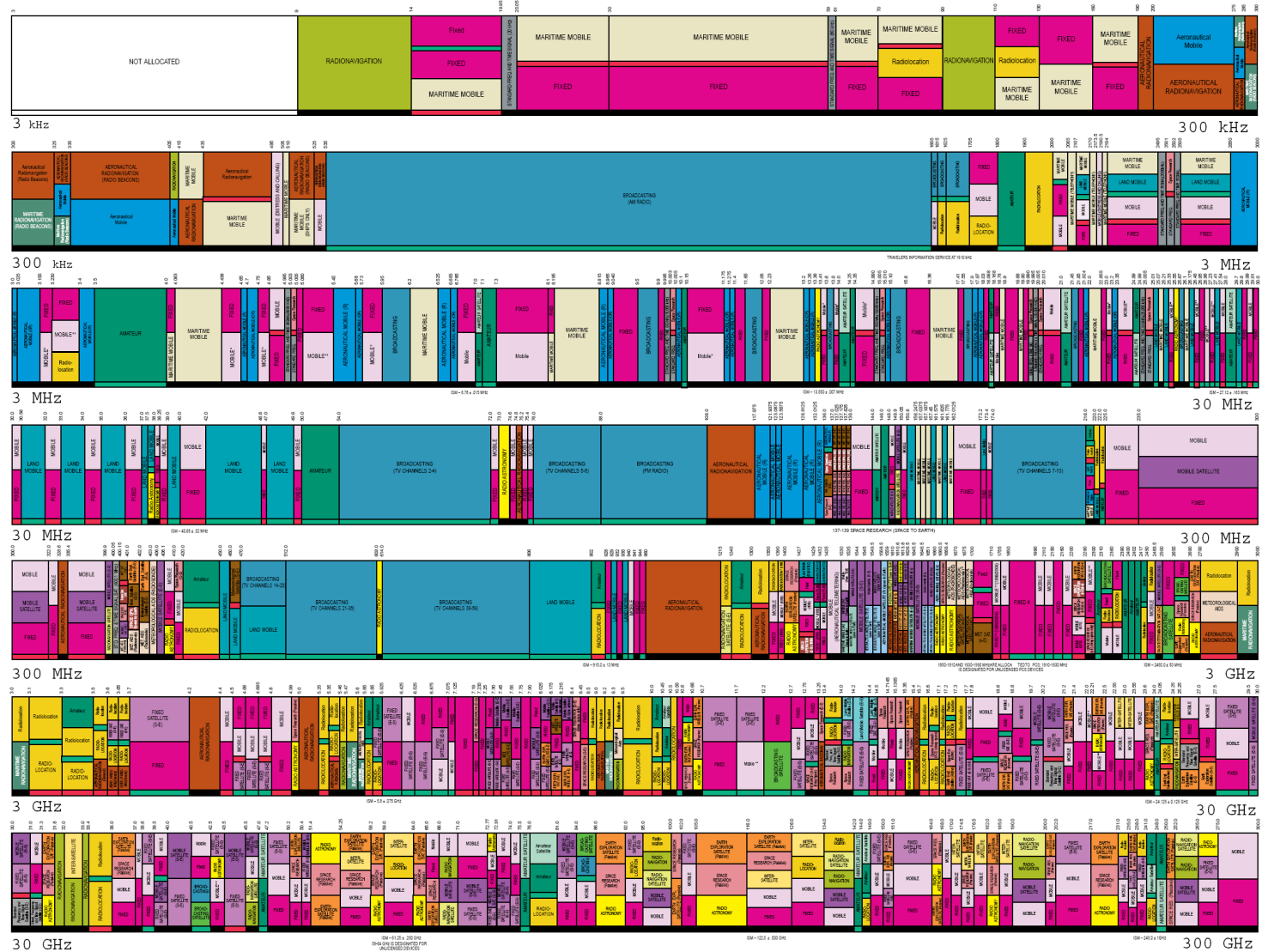
THE RADIO SPECTRUM

- RADIO SERVICES COLOR LEGEND**
- AERONAUTICAL MOBILE
 - AERONAUTICAL MOBILE SATELLITE
 - AERONAUTICAL RADIONAVIGATION
 - AMATEUR
 - AMATEUR SATELLITE
 - BROADCASTING
 - BROADCASTING SATELLITE
 - EARTH EXPLORATION SATELLITE
 - FIXED
 - FIXED SATELLITE
 - INTER-SATELLITE
 - LAND MOBILE
 - LAND MOBILE SATELLITE
 - LAND MOBILE SATELLITE AID
 - MARITIME MOBILE
 - MARITIME MOBILE SATELLITE
 - MARITIME RADIONAVIGATION
 - MARITIME RADIONAVIGATION SATELLITE
 - METEOROLOGICAL SATELLITE
 - METEOROLOGICAL SATELLITE AID
 - RADIO ASTRONOMY
 - RADIO DETERMINATION SATELLITE
 - RADIOLOCATION
 - RADIOLOCATION SATELLITE
 - RADIONAVIGATION
 - RADIONAVIGATION SATELLITE
 - SPACE OPERATION
 - SPACE RESEARCH
 - STANDARD FREQUENCY AND TIME SIGNAL
 - STANDARD FREQUENCY AND TIME SIGNAL SATELLITE

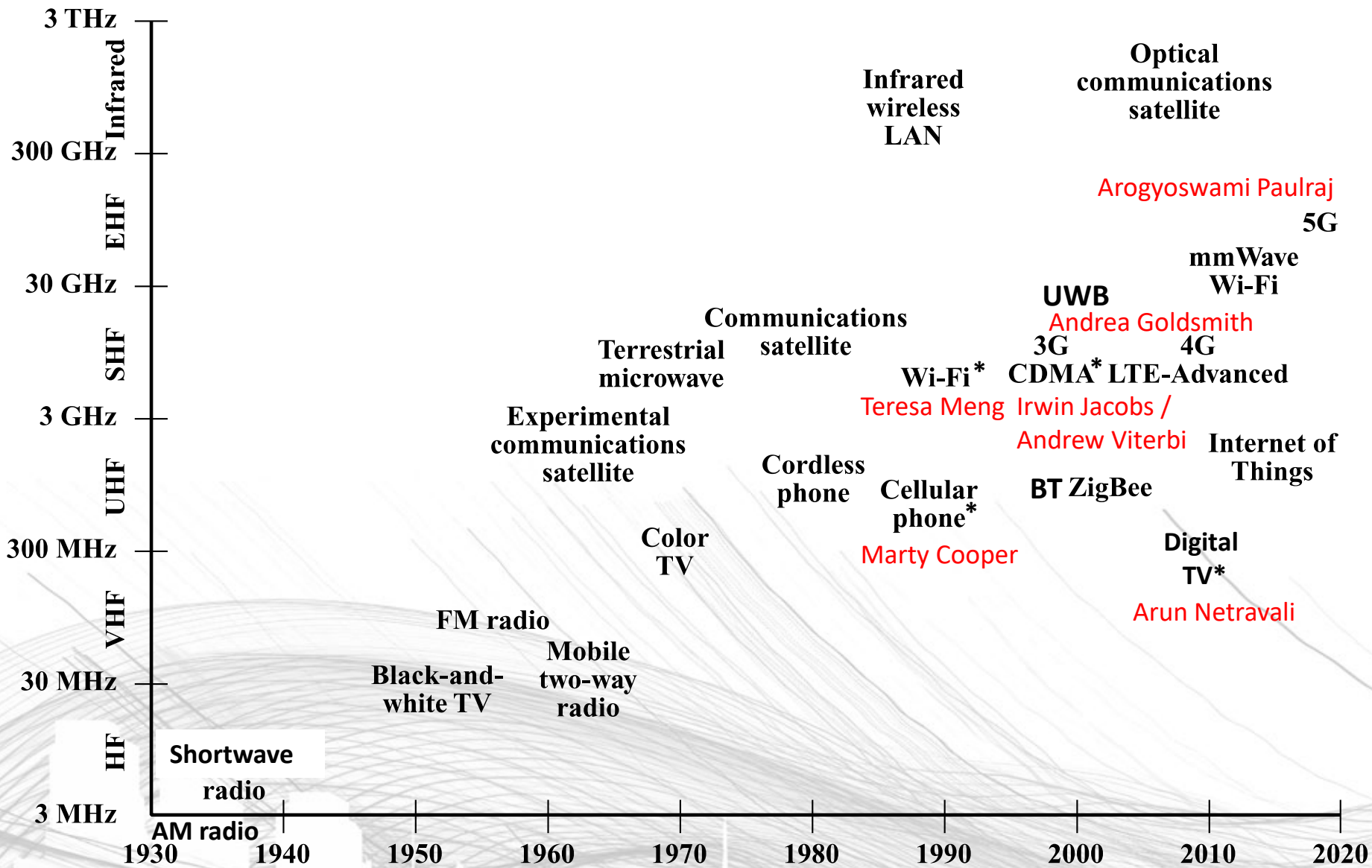
- ACTIVITY CODE**
- GOVERNMENT EXCLUSIVE
 - NON-GOVERNMENT EXCLUSIVE
 - GOVERNMENT/NON-GOVERNMENT SHARED

ALLOCATION USAGE DESIGNATION

SERVICE	EXAMPLE	DESCRIPTION
Primary	FIXED	Capital Letters
Secondary	Mobile	1st Capital with lower case letters
Permitted	BROADCASTING	Capital Letters between oblique strokes



PLEASE NOTE: THE SPACES ALLOTTED THE SERVICES IN THE SPECTRUM ARE NOT PROPORTIONAL TO THE ACTUAL AMOUNT OF SPECTRUM OCCUPIED.



SELECTED WIRELESS COMMUNICATIONS MILESTONES AND ASSOCIATED MARCONI PRIZE WINNERS

Adapted from Wireless Communications & Networks, 2nd Edition – William Stallings

Adaptive Modulation - Andrea Goldsmith – 2020

Artificial Intelligence – Seymour Papert – 1981

Cryptography

James Massey – 1999, Marty Hellman / Whitfield Diffie – 2000, Ronald Rivest – 2007, Taher Elgamal / Paul Kocher - 2019

Information Theory and Algorithm Development

Claude Shannon (LAA) - 2000, E. Collin Cherry – 1978, Andrew Viterbi – 1990, Jacob Ziv – 1995, Robert G. Gallager – 2003, Caude Berrou – 2005, Irwin Jacobs – 2011, Jack Wolf – 2011, Thomas Kailath (LAA) – 2017, Siavash Alamouti – 2022

Internet Operation and Content Distribution

Bob Kahn – 1994, Vint Cerf – 1998 (LAA – 2023), Sir Tim Berners-Lee – 2002, Bob Metcalfe – 2003, Sergey Brin / Larry Page – 2004, John Cioffi – 2006, Peter Kirstein – 2015, Tom Leighton – 2018

Communications and Information Technology Industry Leadership

William Baker – 2003, Gordon Moore – 2005, Bob Galvin - 2011

Lasers and Fiber Optics

Arthur L. Schawlow – 1977, Izuo Hayashi – 1983, Sir Charles Kuen Kao – 1985, Robert N. Hall – 1989, Herwig Kogelnik / Allan Snyder – 2001, Sir David Payne – 2008, Andrew Chraplyvy / Robert Tkach – 2009

**THE REST OF THE STORY – TECHNOLOGIES / MARCONI PRIZE WINNERS
WHO HAVE ENABLED THE RISE IN GLOBAL WIRELESS
TELECOMMUNICATIONS**

MIMO Antennas - Arogyaswami Paulraj – 2014

Packet Switching, Relays and Modems

Francesco Carassa – 1983, Leonard Kleinrock – 1986, Bob Lucky – 1987, Paul Baran – 1991, David Forney – 1997, Amos Joel, Jr. (LAA) - 2009

Portable Cellular Phone – Marty Cooper – 2013

Positioning, Timing and Navigation – Brad Parkinson - 2016

Print & Image Processing

Charles Geschke / John Warnock – 2010

Satellite Communications

John R. Pierce – 1979, Yash Pal - 1980, Sir Arthur C. Clarke – 1982

Semiconductor & Circuit Design Enhancements

Sir Eric Ash – 1984, Henry Samueli – 2012, Federico Faggin – 1988, Teresa Meng - 2024

Speech Synthesis & Recognition – James Flanagan – 1992

Video Compression / Digital TV – Arun Netravali – 2017

**THE REST OF THE STORY – TECHNOLOGIES / MARCONI PRIZE WINNERS
WHO HAVE ENABLED THE RISE IN GLOBAL WIRELESS
TELECOMMUNICATIONS**

WIRELESS TECHNOLOGY

- The Promise: To support people's insatiable desire to communicate by enabling anyone to communicate any data type, at anytime, from anywhere in the world to anyone in any other point in the world!
- Amazingly, this promise is being fulfilled extremely rapidly!
- Even "things" are increasingly talking to other "things"! ("Internet of Things" (IoT) or "Machine to Machine" Communications (M2M))



Dr. Joe Mitola

**'THE GODFATHER OF SOFTWARE RADIO'
JOAO DA SILVA, 1997**

**CREATOR OF SOFTWARE-DEFINED AND
COGNITIVE RADIO**

Thoughts On The Future Of Wireless Technology

Start With Radio: Start Young



Add Computing



To Generate the Future of Radio

The Future of Radio

More AI for More Cognition

The Future of Radio

More AI for More Cognition

More Autonomous Sharing of the
Radio Spectrum in Space and Time

The Future of Radio

More AI for More Cognition

More Autonomous Sharing of the
Radio Spectrum in Space and Time

Smarter Cross-Validation for Safer More
Resilient, More Secure Wireless

Get the Future of Radio



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