



Laporan Pelaksanaan Kuliah Umum Teknik Elektro

**5G Mobile Technology oleh
Dr. Muhammad Suryanegara, S.T., M.Sc.**

disusun oleh Tim Dosen Teknik Elektro

**UNIVERSITAS MUHAMMADIYAH JAKARTA
JAKARTA
2018**

KATA PENGANTAR

Assalamualaikum Wr. Wb.

Puji syukur kami panjatkan kepada Allah SWT karena atas rahmatnya kita selalu diberikan kesehatan untuk menjalankan aktivitas sehari-hari.

Laporan pertanggungjawaban ini adalah penjelasan tentang kegiatan kuliah umum teknik elektro yang berjudul “5G Mobile Technology” oleh Dr. Muhammad Suryanegara, S.T., M.Sc. pada tanggal 14 Juli 2018 di Auditorium Fakultas Teknik Universitas Muhammadiyah Jakarta. Kegiatan kuliah umum ini bertujuan untuk menambah wawasan tentang teknologi 5G bagi para mahasiswa dan dosen teknik pada umumnya dan para mahasiswa dan dosen teknik elektro pada khususnya di Universitas Muhammadiyah Jakarta dan untuk menambah nilai akreditasi Teknik Elektro Universitas Muhammadiyah Jakarta.

Kami mengucapkan terima kasih kepada semua pihak yang telah membantu baik secara moril maupun materil sehingga kegiatan kuliah umum ini bisa berjalan dengan lancar.

Jakarta, 1 August 2018

DAFTAR ISI

1	PENDAHULUAN	1
1.1	LATAR BELAKANG.....	1
1.2	TUJUAN	1
2	PELAKSANAAN KULIAH UMUM.....	1
3	PENUTUP.....	1
4	LAMPIRAN.....	2
4.1	SURAT UNDANGAN.....	2
4.2	FOTO SAAT KEGIATAN KULIAH UMUM	3
4.3	BIODATA DIRI DR. MUHAMMAD SURYANEGARA	5

DAFTAR GAMBAR

Gambar 1 Surat undangan untuk memberikan kuliah umum.	2
Gambar 2 Dr. Muhammad Suryanegara memulai presentasi setelah dibuka oleh moderator Ir. Deni Almanda, M.T.	3
Gambar 3 Dr. Muhammad Suryanegara mempresentasikan biodata diri.	3
Gambar 4 Kaprodi Ir. Erwin Dermawan, M.Sc. dan Sekprodi Haris Isyanto, S.T., M.T. sedang menyimak kuliah umum.	4
Gambar 5 Para dosen teknik elektro dan mahasiswa sedang menyimak kuliah umum.	4

1 PENDAHULUAN

1.1 LATAR BELAKANG

Kuliah umum adalah sebuah kegiatan berbentuk kuliah tentang topik tertentu yang bisa dihadiri baik mahasiswa maupun dosen dari berbagai jurusan. Kuliah umum sudah menjadi sesuatu yang wajib bagi perguruan tinggi untuk menambah wawasan tentang topik tertentu seiring dengan perkembangan zaman. Selain itu kuliah umum juga merupakan salah satu komponen untuk penilaian akreditasi suatu jurusan di perguruan tinggi.

1.2 TUJUAN

Kegiatan kuliah umum ini bertujuan untuk menambah wawasan mahasiswa dan dosen teknik elektro di Universitas Muhammadiyah Jakarta tentang teknologi 5 G dan untuk menambah nilai akreditasi Teknik Elektro Universitas Muhammadiyah Jakarta.

2 PELAKSANAAN KULIAH UMUM

Kuliah umum ini telah dilaksanakan dengan langkah berikut:

- Rapat dosen teknik elektro
- Korespondensi dengan narasumber
- Briefing panitia
- Spanduk
- Plakat
- X banner
- Backdrop
- Materi, CV
- Upload pengumuman ke situs FT UMJ
- Daftar hadir
- Tempat
- Konsumsi
- Keamanan
- Kuliah umum
- Mengambil foto
- Sertifikat
- Laporan

3 PENUTUP

Demikian laporan pelaksanaan kuliah umum teknik elektro ini dibuat agar bisa memberikan penjelasan dan gambaran pelaksanaannya. Kami mengucapkan terima kasih kepada pihak yang sudah membantu sehingga pelaksanaan kuliah umum ini bisa berjalan dengan baik. Kami juga mohon maaf apabila ada kekurangan dalam pelaksanaan kuliah umum ini. Semoga kuliah umum ini bisa menambah wawasan mahasiswa dan dosen teknik Universitas Muhammadiyah Jakarta bisa tentang teknologi 5 G.

4 LAMPIRAN

4.1 SURAT UNDANGAN

 	JURUSAN TEKNIK ELEKTRO FAKULTAS TEKNIK UNIVERSITAS MUHAMMADIYAH JAKARTA
Kampus B : Jln. Cempaka Putih Tengah 27 Jakarta Pusat 10510 Telp: (021) 4256024, E-mail : elektroumj@ftumj.ac.id	
No : 212 / F.4.1.2 / TE / UMJ / VII / 2018	Jakarta, 3 Juli 2018
Lamp. : -	
Hal : Undangan untuk memberikan kuliah umum	
Yth. Dr. Muhammad Suryanegara, S.T., M.Sc. di tempat	
Assalamualaikum Wr. Wb.	
Dengan ini, kami dari Teknik Elektro Universitas Muhammadiyah Jakarta mengundang Bapak Dr. Muhammad Suryanegara, S.T., M.Sc. untuk memberikan kuliah umum dengan tema "Teknologi 5G Mobile Communications" yang akan dilaksanakan pada Sabtu 14 Juli 2018 pukul 09.00 di Fakultas Teknik Universitas Muhammadiyah Jakarta.	
Demikianlah surat undangan ini kami sampaikan. Atas perhatian dan kerjasamanya, kami ucapkan terima kasih.	
Wassalamualaikum Wr. Wb.	
Kaprodik Teknik Elektro FT-UMJ	
 	
Ir. Erwin Dermawan, M.Sc.	

Kampus A : Jln. KH. Ahmad Dahlan Ciputat—Jakarta Selatan 15419 Telp : 021- 7401894, 7492862. <http://www.umj.ac.id> - E-mail : info@umj.ac.id

Gambar 1 Surat undangan untuk memberikan kuliah umum.

4.2 FOTO SAAT KEGIATAN KULIAH UMUM



Gambar 2 Dr. Muhammad Suryanegara memulai presentasi setelah dibuka oleh moderator Ir. Deni Almanda, M.T..



Gambar 3 Dr. Muhammad Suryanegara mempresentasikan biodata diri.



Gambar 4 Kaprodi Ir. Erwin Dermawan, M.Sc. dan Sekprodi Haris Isyanto, S.T., M.T. sedang menyimak kuliah umum.



Gambar 5 Para dosen teknik elektro dan mahasiswa sedang menyimak kuliah umum.

4.3 BIODATA DIRI DR. MUHAMMAD SURYANEGARA

Muhammad Suryanegara

IEEE Senior Member, Ir, IPM (Professional Engineer)

2005 –present: Lecturer and Researcher in
Department of Electrical Engineering
Universitas Indonesia,

Email : m.suryanegara@ui.ac.id suryanegara@gmail.com

Mobile : +62 8129518440



Office Address: Departemen Teknik Elektro Lantai 1
Fakultas Teknik – Kampus Universitas Indonesia
Depok 16424 – Indonesia

Educational Background

- Bachelor of Engineering in Electrical Engineering - 2003 – Universitas Indonesia
- Master of Science in Telecommunications - 2004 – University College London
- Doctor in Engineering – 2011 – Tokyo Institute of Technology

Other Professional Related Positions

Drafting Group (DG) Chairman for *Asia Pacific Telecommunity*– APG Preparatory Group for World Radiocommunications Conference-19 (Agenda Item 9.1.2 about Sub-Orbital Vehicle) , 2017 - present

Drafting Group (DG) Chairman for *Asia Pacific Telecommunity*– APG Preparatory Group for World Radiocommunications Conference-15 (Agenda Item 1.17 about WAIC technology) , 2013 - 2015

CISCO Training Center - Local Manager 2011 – 2013
Director for Industrial Collaboration Unit – 2014 - 2016
both are with Dept. of Electrical Engineering Universitas Indonesia,

Experiences on Professional Activities

2006: Team of professional trainer to PT TELKOMSEL (The 1st National 3G operator in Indonesia). The topic of training is 3G-WCDMA: Technical and Management Challenge, delivered to the employee of PT TELKOMSEL throughout country.

2006-2007: Member of National R&D Team for The National WIMAX Development, under Ministry of Communications and Information Technology Republic of Indonesia.

2007: Consultant for Ministry of Industry Republic of Indonesia, on developing the National Policy for Local Mobile Phone Manufacturer

2012: Consultant for Ministry of Energy and Natural Resources Republic of Indonesia, on developing the Document of National Policy for the Eco-label of Electronic appliances

2012: Chair of R&D Team for "The Development of Maritime Radio for Indonesian Fisherman" , under Ministry of Communications and Information Technology Republic of Indonesia.

2014: Member of National R&D Team for "The Development of RF Monitoring Sensor Radio " , under Ministry of Communications and Information Technology Republic of Indonesia .

2015: Consultant for Ministry of Communications and Information Technology Republic of Indonesia, on developing the Document of National Strategic Plan of 2G/3G BTS deployment in National Border Area.

2016: Consultant for Association of Indonesian Telecommunications Operators, on developing the Document of 3G/4G National coverage Map.

2016: Consultant for Association of Indonesian Telecommunications Operators, on developing the Document of IP-Interconnection Strategic Plan.

2016: Member or National Working Group for 5G Mobile Technology, under Ministry of Communications and Information Technology Republic of Indonesia

Experiences on Research Grant

2012 – granted by : *Program Lanjutan Dukungan Pengembangan Perangkat Telekomunikasi – Ministry of Communications and Information Republic of Indonesia,*
IDR 500,000,000

“The Development of Maritime Radio for Indonesian Fisherman”

2012 - granted by : *Hibah Riset Madya Universitas Indonesia IDR 100,000,000,-*

“The Development of Technological Forecasting Algorithm based on Gompertz Curve Model for the Implementation of 4G Mobile Cellular in Indonesia”

2013 – granted by : *Hibah Riset Madya Universitas Indonesia IDR 100,000,000,-*

“The Development of Local Innovation Model and the application for the health-related applications on 4G networks”

2014 - granted by : *Program Lanjutan Dukungan Pengembangan Perangkat Telekomunikasi – Ministry of Communications and Information Republic of Indonesia,*
IDR 500,000,000

“The Development of RF Monitoring Sensor Radio “

2015 – granted by : *Hibah Riset Utama Universitas Indonesia IDR 200,000,000*

“The Development of Spectrum Management algorithm for UAV regulatory at 12 GHz”

2016 – 2017 granted by : *Hibah Penelitian Unggulan Perguruan Tinggi, Ministry of Research and Higher Education Republic of Indonesia IDR 350,000,000,-*

“Study of Innovation and Standardization for 5G (2 consecutive years)”

Major Publications

M.Suryanegara, Fery Andriyanto, and Bagus Winarko. "What changes after switching to 4G-LTE? Findings from the Indonesian Market." *IEEE Access* 5, 17070-17076 (2017).

Rahman, Arrief, and M. Suryanegara. "The development of IoT LoRa: A performance evaluation on LoS and Non-LoS environment at 915 MHz ISM frequency." *Signals and Systems (ICSigSys), 2017 International Conference on.* IEEE, 2017.

Enriko, I. Ketut Agung, Muhammad Suryanegara, and Dadang Gunawan. "Heart Disease Prediction System using k-Nearest Neighbor Algorithm with Simplified Patient's Health Parameters." *Journal of Telecommunication, Electronic and Computer Engineering (JTEC)* 8.12 (2016): 59-65.

- D. Kusumawati, M. Suryanegara, "Spectrum Requirement for IoT Health Sector in Indonesia", Proceeding of IEEE International Symposium on Telecommunications Technology (ISTT), Kuala Lumpur, 26-28 November 2016.
- L.S. Aji, M. Suryanegara, "The Cost-Benefit Analysis of Integrated Government Radio Network for PPDR (Public Protection And Disaster Relief) in Indonesia", Proceeding of IEEE International Symposium on Telecommunications Technology (ISTT), Kuala Lumpur, 26-28 November 2016.
- AA Wibowo, M Suryanegara, "On developing the model of Smart Logistic Transport in Indonesia", Proceeding of 2016 IEEE International Management of Innovation and Technology (ICMIT), Bangkok, 19-22 September 2016.
- M. Suryanegara, AS Mirfananda, M.Asvial, N.Hayati, "5G as Intelligent System: Model and Regulatory Consequences, Proceeding of SAI Intelligent System Conference 2016, London, 21-23 September 2016
- M.Suryanegara, "5G as Disruptive Innocation: Standard and Regulatory Challenges at a country level", International Journal of Technology (IJTECH), Issue 4, pp. 38-45, 2016.
- F Triani, M Suryanegara "Speech compression for voice cockpit recording over 1090 MHz ADS-B via satellite reception", Proceeding of 2016 22nd Asia-Pacific Conference on Communications (APCC), pp 436-439, Yogyakarta, 25-27 Agustus 2016.
- MH Iskandar, M Suryanegara, "The pulse duration effect to ADS-B via satellite reception: Comparison analysis of Iridium and Globalstar", Proceeding of 2016 22nd Asia-Pacific Conference on Communications (APCC), pp 586-590, Yogyakarta, 25-27 Agustus 2016.
- A.S. Mirfananda, M. Suryanegara, "5G Spectrum Candidates Beyond 6 GHz : A Simulation of Jakarta Environment", Proceeding of IEEE *TENSYMP*, 8-10 Mei 2016
- R.Pangestu, M. Suryanegara, "Mitigation Scenarios for Crossed-Timeslot-Interference (CTI) in LTE TDD System," Proceeding of IEEE *TENSYMP*, 8-10 Mei 2016
- Achmad Nashiruddin, N.Raharya and Muhammad Suryanegara, "The Interference Analysis between Wireless Avionics Intra-Communications (WAIC) and EESS Systems at 22-23 GHz", Proceeding of Quality in Research (QiR), Lombok, 2015.
- M.Suryanegara, N.Raharya, and M KHalimuddin, "The Comparison between Asymmetric Turbo Code using Ω' QPP Interleaver and LTE Turbo Code" Proceeding of Quality in Research (QiR), Lombok, 2015.
- M. Suryanegara, IG Dharma N, BA Adhi, M Firdaus Lubis, M.Rifki Eka Putra, " The Local Innovation Perspective: The Develppment of Mobile Herbal Service for Indonesian Mobile Cellular Market," International Journal of Technology (IJTECH), Issue 2 , 2015
- Suryanegara, M., M Asvial, "In Searching for 4G Mobile Service Applications: The Case of The Indonesian Market," Telecommunications Journal of Australia, Vol.63 No. 2.
- Suryanegara, M., A. Ramadhan, A.K. Akbar, M. Asvial, "The forecasting model of 4G LTE implementation in Indonesia," IEEE International Conference on Management of Innovation and Technology (ICMIT), Singapura, 2014.

Raharya, N., M. Suryanegara, "Compatibility analysis of wireless avionics intra communications (WAIC) to radio altimeter at 4200-4400 MHz," 2014 IEEE Asia Pacific Conference on Wireless and Mobile, Bali, Indonesia, 2014, pp. 17- 22.

Suryanegara, M., "An Evolutionary Model of Service Innovation in 4G Mobile Technology," 2012 International Conference on Innovation, Management and Technology Research (ICIMTR2012), Malacca, Malaysia, Mei 2012.

Suryanegara, M., K. Miyazaki, "Towards 4G Mobile Technology : Identifying Windows of Opportunity for a Developing Country," International Journal of Technology, Volume 3, Issue No. 1, 2012.

Suryanegara, M., K. Miyazaki, "Mobile Telephony Diffusion in Indonesia : Case Study of The Big Three Operators," International Journal of Telecommunications Management, Volume 3 No:2, 2010, ISSN: 1754-1552 (Paper) 1754-1670 (Online).

Suryanegara, M., K. Miyazaki, "Technological Changes in Innovation System towards 4G mobile services," International Journal of Technology, Policy, Management, Volume 10 No: 4, 2010.