IEEE
INDONESIA SECTION
2018

Newsletter

IEEE Indonesia Section 30th Anniversary

30 YEARS 1988-2018 ANNIVERSARY IEEE Indonesia Section

By Fathimah Rahimullah

The IEEE Indonesia Section Gathering was held on Saturday, the 17th of March 2018. The event was not only a member gathering but also a celebration for the 30th anniversary of IEEE Indonesia Section.There were 108 people who attended the event which consists of 80 IEEE members and 28 non-members. The event took place in Apung Room, Universitas Indonesia(UI) Central Library. The one day event consists of member gathering and networking, SMART CITY panel discussion, awards and recognition, game show and Indonesia Section electioneering.

The opening ceremony speeches was from the General Chair of IEEE Indonesia Section, Prof. Dr. Fitri Yuli Zulkifli, S.T., M.Sc., IPM, SMIEEE; Vice Dean for Academic affairs from Faculty of Engineering UI, Dr. Ir. Muhamad Asvial, M.Eng.; and the Advisory Committee Chair of IEEE Indonesia SectionSatriyo Dharmanto.

he first event was Panel Discussion with five speakers.They were Dr. Chairul Hudaya from Universitas Indonesia, Mr. Aryo Pamoragung from The Indonesian Ministry of Communication and Information (Kominfo), Mr. Rahmadi Mulyohartono from PT XL Axiata Tbk, Mr. Wahyu Haris Kusuma Atmaja from PT ICON+, and Mr. Wahyudi from PT Telkom. The topic of the Panel Discussion was "**Smart City**"

which was discussed through various aspects. The energy aspect was discussed by Dr. Chairul Hudaya; the ecosystem was discussed by Mr. Aryo Pamoragung; the network and connectivity aspect were discussed by Mr. Rahmadi Mulyohartono; the support of ICON+ for Smart Cities was discussed by Mr. Wahyu Haris Kusuma Atmaja; and Mr Wahyudi discussed how Smart City can be used to enlighten Indonesia as a whole. The panel discussion was led by Dr. M. Ary Murti as the moderator.

Panelis and moderator of "Smart City" Panel Discussion

The second event was the 30th anniversary celebration of IEEE Indonesia Section. The celebration was led by Dr. Arifin Nugroho as he made a speech and led the prayer for a better IEEE Indonesia Section. Cheers, music, and laughter filled the room as the visitors celebrated the 30th Anniversary of IEEE Indonesia Section.

The next agenda after the break was a speech about IEEE Indonesia Section given by Prof. Dr. Fitri Yuli Zulkifli, S.T., M.Sc., IPM, SMIEEE who is also the General Chair of IEEE Indonesia Section. Afterwards, the awarding ceremony began. The first award that was announced was for Distinguish Lecturer Program, the awardees were Prof. Andriyan Bayu Suksmono MT,Ph.D., SMIEEEwith the topic of Compressive Sampling and Prof. Dr. Ir. Teddy Mantoro, M.Sc, SMIEEE with the topic of File Compression to Support IoT in Industry 4.0. Next, the awards for each chapter were announced based on their performances in year 2017. The chapter with the most members was awarded to the Computer Society Chapter led byDr. Suryadiputra Watimena from Bina Nusantara University;The award for the chapter with the most technical activity was given to the Joint chapter Microwave Theory and Techniques/Antennas and Propagation Society Chapter led by Prof. Dr. Mudrik Alaydrus from Mercu Buana University; and for the most activity report via vtools was awarded to theCommunications Society Chapterled byDr. Rina Pudjiastuti from Telkom University.

The Social Chapter Awardees

The next agenda was a presentation about Region 10 SYWL (Student/Young Professional/Women in Engineering/Life Member) Congress 2018 carried out by Mrs. Kurnianingsih. The presentation was filled with details about the upcoming event that will be held in Bali, Indonesia. Following Mrs. Kurnianingsih's presentation, chapter chairs and affinity groups were asked to present and promote their chapters. Women in Engineering AG, was represented by Prof. Dr. Ir. Riri Fitri Sari, M.Sc., MM.. She highlighted about the importance of women in engineering and how to make sure women are more active in this field.

More awards and recognition followed, this time three categories of awards were announced. The first award was for the Life Senior Member who gave their dedication for IEEE Indonesia Sectionuntil today. The awardees wereIr. Arnold Ph. Djiwatampu, IPM, LSM, Dr. Ir. Arifin Nugroho, Prof. Dr. Ir. Soegijardjo Soegijoko, and Dr. Ir. Lukas Siswanto Tanutama, M.M..

The DLP Awardees

The Life Senior Member Awardee, Prof Soegijardjo Soegijoko and Dr. Lukas Siswanto Tanutama were not able to make it so they were represented by Mr. Andrian and Mr Suryadi

The second award was for outstanding IEEE scientific Publication Award which was given to Mr. Filbert Hilman Juwono, S.T., M.T.. He had three papers published in IEEE journals. The last award was the life time dedication award,given to four people. They were past Indonesia Section Chairs and until today they stay very active with IEEE Indonesia Section activities.They were Ir. Arnold Ph. Djiwatampu, IPM, LSM, Dr. Ir. Arifin Nugroho, LSM, Prof. Dr. Ir. Dadang Gunawan, M.Eng., SMIEEE, and Ir. Wahidin Wahab, M.Sc., Ph.D., SMIEEE. During the ceremonies the awardees shared their gratitude and experiences of being in IEEE with the audience.

Mr. Filbert Hilman J. receiving his award for Outstanding IEEE Scientific Publication

The lifetime dedication to IEEE Indonesia awardees with Mr. Satriyo Dharmanto (left) and Prof Fitri Yuli Z. (right). Prof. Dadang Gunawan did not make it though so he was represented by Ms. Anna.

The last award announcement was for student. The first award was for "The Best Member get Member in the world, May 2017" which was awarded to Fatimah Sirin from IEEE SBUI. Next, the award was for Selected Student Delegation which was awarded to Michelle Christine from IEEE SB Telkom University and Muhammad Aditya Ramelan from IEEE SB ITB. Last but not least was the award for winning fourth place in the IEEEXtreme which was rewarded to IEEE SB ITB.

The student awardees, Fatimah Sirin was not able to make it so she was represented by Fathimah Rahimullah. The IEEEXtreme team also did not make it so they were represented by Dennis Lesmana.

Finally, there was a session to discuss about the next General Chair for IEEE Indonesia Section 2018. The discussion was moderated by Mr. Satriyo Dharmanto and the members came to a conclusion that Prof. Dr. Fitri Yuli Zulkifli, S.T., M.Sc., IPM will still be the General Chair until 2018. The event ended at around 5 p.m. with a closing prayer led by Dr. Arifin Nugroho.

Development of IoT System for Agriculture
Towards Industry 4.0 Readiness

By: Satriyo Dharmanto

The development of next-generation technologies has the ambition to solve the challenge of improvement accuracy, speed and productivity. Combination between communication, computing and automation are become a key prime mover to make the industry become more efficient, accurate and intelligence.
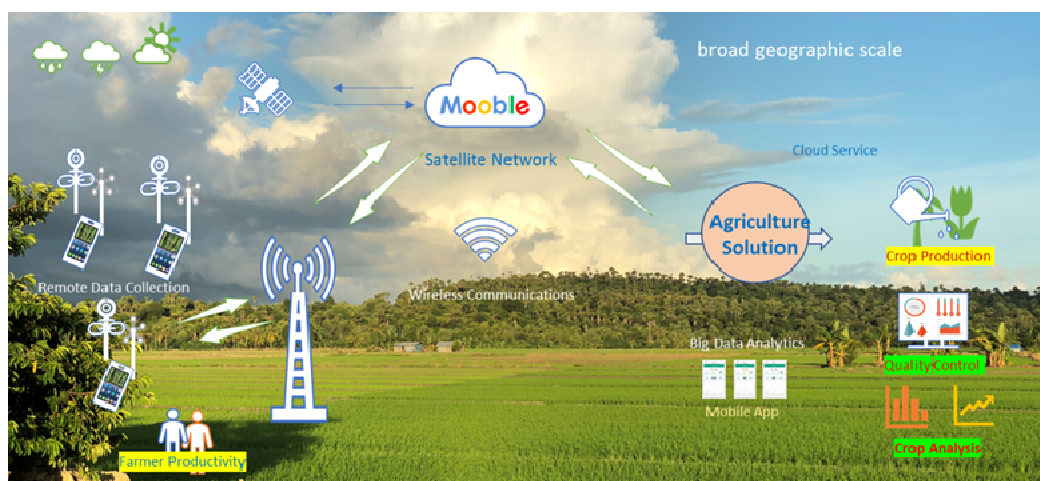
Recently the Indonesian government officially launched the roadmap named "Making Indonesia 4.0", is a new term that refers to the fourth industrial revolution in industry, as an opportunity to enter the top ten of biggest global economies by 2030. The government will push and facilitate the major innovations and researches in the digital technology, which require the development and integration of technology, information and communication as well as connectivity to lead to a more efficient economy. With this competitive strategy, Indonesia has the big opportunity to turn into a competitive nation, with higher quality output, especially in the industry sector.

In the industry 4.0, interoperability is a key, in which device, machine and people will communicate each other. Moreover, information transparency, technical assistance and decentralized decision making will become key disruption, when cyber-physical system has the ability to make simple decisions on their own and become an efficient and intelligence system as autonomous as possible.

In the Industry 4.0, Internet of Things is become main supporter, in combination with Artificial Intelligence (AI), human to machine interface, sensors technology and robotic.

If we refer to Business Insider, www.businessinsider.com, the IoT ecosystem is developed, comprised on any mobile devices, such as smartphone, tablet, wearable devices, sensors, that functions as a remote device to send a command, data, or request for information over the network to a cloud servers which will be able to do orchestration collaboration to million or billion IoT devices. The device will then perform the command or send information back over the cloud network to be further analyzed together with other data which has been available in the internet, and then processed and jointly deliver the outcomes that people desire for many of their life experiences.
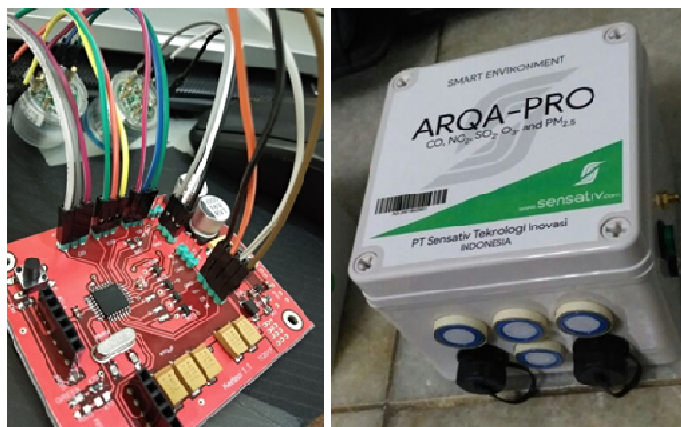
In the last few months, one of the startup in the field of IoT, PT Sensativ Teknologi Inovasi, has been successfully developed an IoT based solution for Agriculture Industry. The solution is combines the intelligence, connectivity, and collaboration to the agricultural plant, consisting of at least four different sub system, i.e. remote data collection, customable cloud server for back-end, big data analytics with AI, and a customable mobile app.

IoT System for Agriculture

The remote data collection is built by several combination of sensor system, consisting of electronic microcontroller board system to control some sensors which will be able to collect some data related to agriculture, environment and weather, such as temperature, relative humidity, barometric pressure, wind speed, wind direction, rain intensity, rain prediction, soil moisture, CO, NO_2, SO_2, O_3, as well as PM2.5 parameters. How many remote data collection systems that will be installed in the farmlands, will correlate to how large the geographic scale of the solution is.

A special developed microcontroller and microprocessor boards, named Kerinci and Rinjani board, to be used to support remote data collection, consist of system on chip (SoC) microcontroller, with additional features and modules, such as power switch management, integrated step up module, and integrated real time clock (RTC) module.
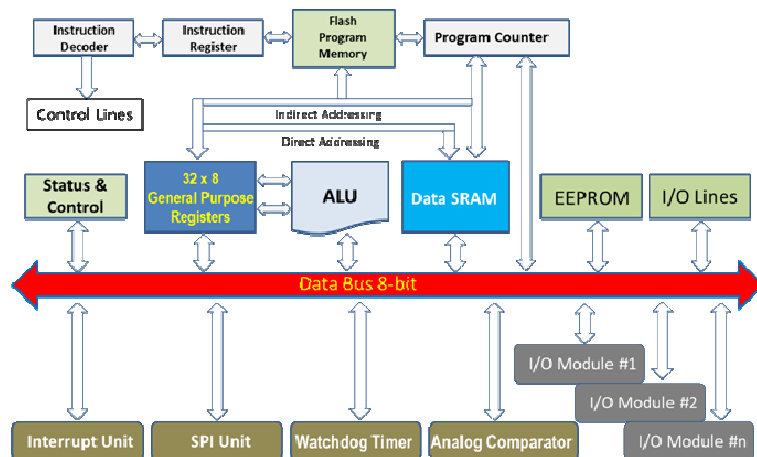

Microcontroller and Microprocessor Board

The processor is typically built and used based on Atmel ARM-based processors, with microcontrollers and microprocessors integrated circuits, that are based on various 32-bit ARM processor cores, with Atmel-designed peripherals and tool support, complement their 8-bit AVR and 32-bit AVR32 lines of microcontrollers.

The microcontroller board has 6 analog inputs and 14 digital I/O pins (of which 6 can be used as Pulse-width Modulation (PWM) outputs), inclusive of 16 MHz quartz crystal. Moreover it includes one USB connection, in circuit serial programming (ICSP) header and one integrated reset button. The 8-bit reduce instruction set computing (RISC) which is combines 32 kB in-system programming (ISP) flash memory with read-while-write capabilities, 1 kB electrically erasable programmable read-only memory (EEPROM), as well as 2 kB static random-access memory (SRAM).

Architecture of Microcontroller and Microprocessor board

The microcontroller also include 23 general purpose I/O lines, 6-channel 10-bit A/D converter, 32 general purpose working registers, flexible timer/counters with compare modes, internal and external interrupts, serial programmable universal synchronous / asynchronous receiver (USART), byte-oriented 2-wire serial interface, serial peripheral interface (SPI) port, programmable watchdog timer with internal oscillator. This system also includes five software selectable power saving modes and operates between 1.8-5.5 volts.

All of the data gathered by remote data collection will be further delivered to the customable cloud server using cellular or low earth orbit (LEO) satellite network, which will be set for the integration with back-end system as a service's server with Artificial Intelligence (AI) capability. The data will be combined with some other data from other sources available in the internet, such as social media, picture, video, call center record, global, and local weather reports, and some other data provided by the agricultural authority. Analyzing all the data is to uncover the patterns and connections that might be invisible, and that might provide valuable insights to the farmers or

other users, to provide any decision consideration.

Farmers can use their smartphones with a customable mobile app, which will be developed in a customized manner. The smartphone which will be used here has the function to access any feedback information from the backend server, to make easier for the farmer to identify
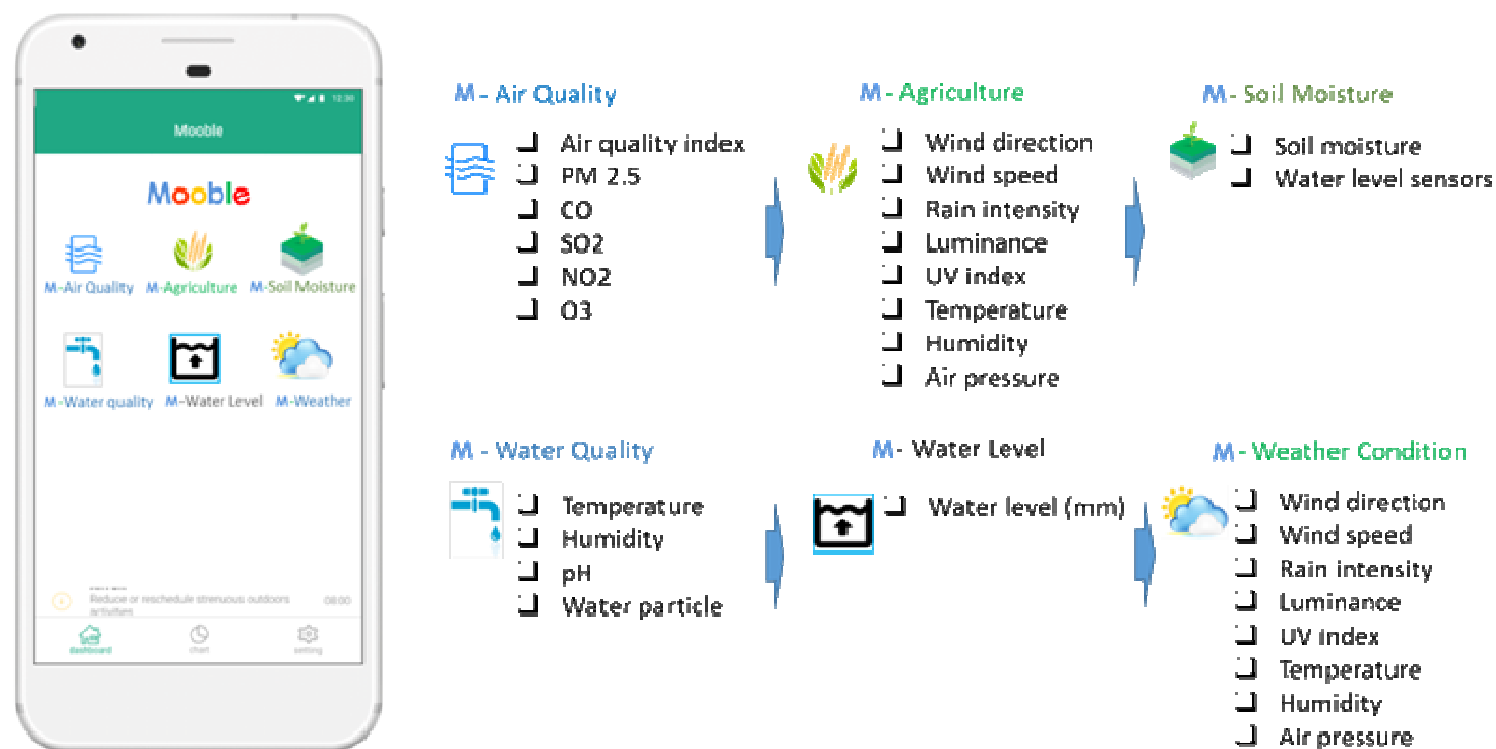

Typical Remote Data Collection

and monitor their farmland condition as well as to take any further decision and action to improve productivity of their crop.

The application development, mobile app and libraries are built based on several programmable languages, such as C and C++ however object-oriented languages such as Python and Ruby are also be used to reduce complexity in programing and improvement flexibility as well as time to market.

The mobile app menu, features and functions are developed based on the requirement and specific condition by the user. Operation menu, function simplicity and user friendly Graphical User Interface (GUI) are the main consideration to develop the mobile app. However improvement the mobile app features can be done easily through over the air in the future.

Typical Mobile App Design

Workshop on writing scientific paper

By Ahmad Syafruddin Indrapriyatna

Faculty of Information Technology, Andalas University held a workshop on writing scientific papers at 19-20 March 2018. The workshop was attended by 252 participants, among them are 18 IEEE members from Padang city area. The event was opened by Andalas University's Vice Rector I, Prof. Dr. Dachriyanus, Apt. He had a big hope that this event can stimulate more scientific papers from Andalas University that can be accepted in the international publication with Scopus indexing.

Prof. Dr. Ir. Fitri Yuli Zulkifli, M.Sc

Because of the number of IEEE member in Padang is still small, Prof. Fitri Yuli Zulkifli began with explaining the various advantages that can be obtained by joining IEEE membership. Furthermore, Prof Yuli presented the ethics for writing the scientific publications and some tips to avoid plagiarism. Dr. Suhardi and Mr. Novianto then presented a reviewer's criteria for international and performed coaching clinic for some of the participant's paper drafts.

The event was closed by Dr. Ahmad Syafruddin Indrapriyatna, Dean of Faculty of Information Technology, Andalas University. He mentioned that this workshop is a fore event to attract potential writers for IEEE International Conference on Information Technology Systems and Innovation (ICITSI) which will be held on October 22nd-26th 2018 in Bandung and Padang, Indonesia.

ICITSI 2018

International Conference on Information Technology System and Innovation

Bandung, 22-23 Oct 2018
Padang, 25-26 Oct 2018
INDONESIA

CALL FOR PAPER

ICITSI invites all of the representatives of academia, industry, business, government and cyber society to present recent advances in the fields of Information technology systems and innovation. All accepted and presented papers are expected to be included in **IEEE Xplore**.

TOPICS

Conference topics include these tracks, but are not limited to :
1. IT Management and Governance
2. Service Science, Computing and Engineering
3. Smart System Engineering and Innovation
4. Internet of Things and Cloud Computing
5. Cyber Security, Forensic and Law
6. Digital Service Industry Solution and Innovation
7. Others

KEYNOTE

Rudiantara, MBA
Indonesian Minister of Communication and Informatics

Dr. Arry Akhmad Arman
Bandung Institute of Technology

Prof. Minoru Okada
Nara Institute of Science and Technology

Dr.Eng. Khoirul Anwar
Telkom University

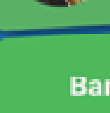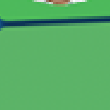## IMPORTANT DATES

Full Paper Submission Batch I   : June 30th 2018
Notification of Acceptance Batch I : July 30th 2018
Camera Ready Paper Batch I   : August 20th 2018
Full Paper Submission Batch II   : August 6th 2018
Notification of Acceptance Batch II: September 7th 2018
Camera Ready Paper Batch II   : August 20th 2018

PAPER SUBMISSION

All submissions must be done trough EDAS online submission system https://edas.info/N24602

For more information please visit our website :
http://icitsi.com

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WORKSHOP ON ORGANIZING IEEE CONFERENCE

By: Ratna Mayasari

In recent years, IEEE Communication Society Indonesia Chapter always held a workshop for management conference. and this year IEEE Communication Society Indonesia Chapter held a workshop on organizing IEEE conference.

Workshop on Organizing IEEE Conference is a workshop that aims to improve the quality of International Conference conducted in Indonesia to be published in IEEE Xplore and indexed by SCOPUS. This workshop was held at eL Royale Hotel Bandung on March 24, 2018 from 08.00 until 17.00 WIB.

With this workshop, we hope with the many organizers of International conference in the country that sponsored by IEEE, it is expected to increase the interest of academics to publish theirresearch. and quality Improvement International conferences in accordance with IEEE quality standards. also published on IEEE Xplore and indexed by Scopus.

The Workshop on Organizing the IEEE Conference was attended by 24 participants from various universities in Indonesia and some of them are members of IEEE Indonesia Section.

The workshop was guided by three speakers the first speaker, Muhammad Nasrun S.Si., M.T. (Conference Coordinator of IEEE Indonesia Section). This session themed the IEEE Conference Portofolio Review, IEEE Conference: Rules & Policy, IEEE Indonesia Sponsorship : MoU& LoA.

Prof. Dr. Fitri Yuli Zulkifli S.T., M.Sc., IPM., SMIEEE. (Chair of IEEE Indonesia Section) became the second speaker. This session contains a detailed explanation of "Best Practice: Standard and Quality of IEEE conference" as the topic.

The last speaker was Dr. Muhammad Ary Murti, S.T., M.T. (Advisory of the IEEE Indonesia Section). This session is explained about "Conference Management Tools Developing a High Quality

Technical Program: Peer Review and Plagiarism Checking with Crosscheck & EDAS and Preparing Publication for IEEE Xplore" as his topic.

IEEE Communication Society Indonesia Chapter expressed gratitude for support and participation in the Workshop on Organizing IEEE Conference. See you on the next workshop.

Editor Corner

We are waiting for the participation of Chapters and Student Branch in Indonesia to share the information of completed and ongoing activities and the participation of Chapters in Indonesia to share the regarding technical articles. For members IEEE who want to share information and articles please email to :

**casie.sn@ieee.org /
hugeng.sps@ieee.org**

We welcome all the readers for the 10th edition of our newsletter. This newsletter is from us to us and hopefully it is useful for all Indonesian IEEE members. We hope that the article can inspire you and in year 2018, we will celebrate IEEE Indonesia Section 30th anniversary. We also will hold R10 SYWL Congress. What are these activities? Read this newsletter, more information is included. We will also continue to update about all our activities through newsletters and e-notices. Please be aware with these important major activities in 2018! Hope you enjoy this newsletter edition! Happy reading!

Casi Setianingsih & Hugeng,
Editor - IEEE Indonesia Newsletter

Official Website

http://ieee.id

IEEE Indonesia Section

INDONESIA SECTION