



TERMS OF REFERENCE
IMPROVEMENT OF SOUND SYSTEMS NUSANTARA HALL
AT ASEC BUILDING

I. BACKGROUND

The ASEAN Secretariat (ASEC) was established in February 1976 by the Foreign Ministers of ASEAN. It was first housed at the Department of Foreign Affairs of Indonesia in Jakarta and moved to the current location at 70A Jalan Sisingamangaraja, Jakarta since 1981. Currently, the ASEAN Secretariat (ASEC) is housed at two buildings:

- 1) The Heritage Building which established in 1981. The building has 9 stories with approximately 11,000 sqm in total area.
- 2) The New Building which was established in 2019. The building consists of two towers, and each has 16 stories with approximately 44,000 Sqm in total area. It is located adjacent to the Heritage Building.

Since its establishment, the ASEAN Secretariat Building has served as a central hub for ASEAN's operations and initiatives. One of the building components to support ASEC's operation is sound system. In 2019, the sound system in the Nusantara Hall was successfully installed to meet meeting standards and support various official events. However, there are repeated feedback from users and attendees indicating difficulty understanding spoken content during both conference-style and theatre-style events. The sound system is not adequately capable of delivering balance sound pressure levels throughout the room and speech intelligibility has been informed as unsatisfactory.

The proposed project involves reposition and calibration of the current sound system and installation of a new speaker with a modern and advanced audio control system that will enhance sound quality, reliability, and speech reinforcement during meetings and official functions. This upgrade is necessary to ensure that the Nusantara Hall continues to meet the technical standards required for high-level ASEAN events.

The ASEAN Secretariat seeks qualified and experienced vendors which has appropriate expertise to efficiently provide solution to the current problem as well as provide trusted after sales service, maintenance, and training.

II. OBJECTIVE

The objective of this work is to improve the existing sound system through repositioning and calibration, complemented by the installation of new speakers and a modern audio control system. The improvement aims to enhance sound quality, reliability, and speech clarity during ASEAN meetings and official functions.

III. EXPECTED DELIVERABLES

1. Completion of the installation works for the audio and control system, fully tested and commissioned for operational use in the Nusantara Hall.
2. Provision of operation manuals, maintenance guides, training and troubleshooting instructions for the new audio and control system.

IV. SCOPE OF WORKS

The Scope of Works for the Improvement of Sound Systems Nusantara Hall at ASEC Building are as follows:

1. Preparation of works by providing manpower, tools, materials, safety equipment and necessary protection to prevent damage of other building items during the working process. Contractor is responsible for repairing or replacing of any interior surface affected by the execution of the work.
2. The contractor is responsible for carefully shifting or removing the existing sound system components (e.g., speakers, amplifiers, mixers, cabling, control units, and other accessories) that may affect the installation of the new audio systems. Contractor to return removed A/V equipment to ASEC. Unused cabling, accessories and other parts must be removed from the site daily.
3. The contractor shall reposition & calibrate the existing speakers, mixer and install the new audio and control system, including all control units, speakers, amplifiers, cabling, and other accessories. The installation must consider the following:
 - a) All components are properly mounted, anchored, and connected in accordance with SNI electrical and low-voltage installation standards.

- b) The contractor shall be responsible for repositioning the installed mixer to a different position in the control room.
 - c) The contractor shall repair the connection of the XLR jack located at the stage of the Nusantara Hall to the mixer in the Control Room.
 - d) The contractor is responsible for ensuring that all components are installed with care to avoid damage during installation. Any damage caused during the installation process must be repaired or replaced by the contractor at no extra cost to ASEC. The contractor is also responsible for providing protection for sensitive equipment.
4. System Configuration, Calibration, and Testing:
- a) After installation, the contractor shall configure and calibrate the system, ensuring proper sound distribution, equalization, device synchronization, and optimize audio performance in Nusantara Hall.
 - b) The contractor must conduct thorough testing to ensure the full functionality of the system, including all control units, speakers output, function of amplifiers, mixers, and other accessories.
5. The contractor must conduct training on the proper repair, maintenance, and troubleshooting procedures for the new sound system. Contractor to provide manuals for ASEC reference.
6. The contractor must include a **1-year free maintenance & warranty** period as part of the project. During this period, the contractor will provide regular checks, troubleshooting, and any necessary corrective maintenance for the audio & control system at no additional cost to ASEC. The Contractor will be required to undertake refresher training during this period.

V. TECHNICAL SPECIFICATIONS

The Technical Specifications for the Improvement of Sound Systems Nusantara Hall at ASEC Building are as follows:

No.	Description	Quantity
1	Line Array Loudspeaker (1 set consists of 4 speakers) Z-7B-HX-AS or with the following equivalent technical specification: - i. Acoustic Output Capability - Capable of achieving a minimum peak output of 137 dB Max SPL per element.	2 set

	ii. Acoustical Frequency Response - 60 Hz - 15 kHz (-10 dB bandwidth threshold). iii. Nominal Dispersion Coverage - 90° Horizontal × 10° Vertical spatial coverage pattern. iv. Transducers Configuration - 1 × 12" Neodymium Low-Frequency (LF) driver and high-frequency compression drivers featuring a minimum of 2 × 2.4" voice coil configuration v. Processing & Electronics - Dedicated digital signal processing engine (onboard or external amplifier matrix management) optimized to protect components and ensure intended frequency/phase system response.	
2	Subwoofer with original universal accessory caster kit (EON718S or equivalent technical specification)	2
3	Speaker PA 15-inch with standing bracket (EON715 or equivalent technical specification)	4
4	Speaker Monitor Stage (ZXA1-90B or equivalent technical specification)	2
5	Speaker Viewing Room with brackets and accessories (ZS-F03BT-AS or with the following equivalent technical specifications: - i. Transducer Component Size - Minimum 8" uniform driver assembly layout format. ii. Constant-Voltage Power Tap - Rated continuous output handling at 15 Watts on standard 100V distributed transmission line parameters. iii. Maximum System Power Limit - Short-term transient/peak handling capability threshold of 30 Watts. iv. Rated Signal Input Voltage - Dual-voltage multi-tap compatibility supporting standard 70V / 100V distributed lines. v. Acoustic System Sensitivity - Minimum baseline output index of 97 dB SPL measured at 1 Meter distance with 1 Watt power application (1W / 1m). vi. Maximum Acoustic Output - System output envelope reaching up to a maximum threshold of 120 dB Max SPL. vii. Acoustical Frequency Response - 60 Hz - 17 kHz system operational range bandwidth.	4
6	Power Amplifier (DA-550F or equivalent technical specification)	2
7	Power Amplifier (ZA-D500 or equivalent technical specification)	1
8	Digital Networked Loudspeaker Processor 4-In/8-Out (DX4.0 or with the following equivalent technical specifications: i. Input/Output Architecture - 4 Discrete Inputs and 8 Discrete Outputs utilizing balanced XLR connectivity interfaces.	1

	ii. DSP Processing Core - High-performance 24-bit / 96 kHz native digital audio transformation. iii. Maximum Input Handling - Minimum capability threshold of +20 dBu maximum input level. iv. Dynamics & Filtering Tools - Comprehensive on-board processing per channel including Compressor, Limiter, High-Pass Filter (HPF), and Low-Pass Filter (LPF) algorithms. v. Equalization & Filtering Block - Parametric EQ (PEQ), High-Shelf, Low-Shelf, BandPass, and Notch filtering blocks. vi. EQ Processing Bands - Minimum allocation of 15 bands of PEQ per Input channel and 10 bands of PEQ per Output channel. vii. Signal-to-Noise Ratio (S/N) - Minimum of 113 dB (@ +20 dBu maximum level, 1 kHz signal, A-weighted parameter metric).	
9	Reference Microphone (RTA-M or equivalent technical specifications)	1
10	Supply & install XLR Cable Snake 8 input, 4 output 60 meters (termination inside Control Room)	1
11	Supply & install extension cord YR-790-10 AS (Must be compatible with delegate mic TS-682 and central unit TS-690)	4
12	Wireless Microphone SLXD 24 DA BETA 58 (2 Microphone with 1 Receiver)	1
13	Headset Microphone – Perception Wireless Set (AKG WMS-45 or equivalent)	1
14	Wireless Antenna Amplifier. Must be compatible with Mic R300HD and include suitcase, tripod 2 units and 10 meters UHF cable extension. (ADS-14 or equivalent specification and must compatible with Mic R300HD)	1
15	Mixer 8 Channel – (MCX8 or equivalent specification)	1

Contractor to provide technical specification of the proposed audio equipment above in the tender technical proposal to be part of the technical assessment

VI. GENERAL REQUIREMENTS

1. The contractor is recommended to attend the preliminary site visit to check existing conditions to ensure that the proposal submitted will cover all possible conditions. ASEC will not be responsible for covering additional costs due to differing site conditions.

2. The contractor must ensure that the newly installed sound system (speakers, amplifiers, mixers, cabling, control units, and other accessories) meets all required safety standards, local best practices (SNI) with proper testing and calibration to prevent accidents, and safeguarding ASEC property from any potential damage during installation and testing.
3. The contractor shall maintain a high standard of cleanliness and tidiness in the work area during and after installation, ensuring that all equipment, tools, and waste materials are properly managed and disposed of.
4. The contractor must ensure all work is carried out with minimal disruption to ASEC's daily operations and ensure safety protocols are strictly followed during the installation process.
5. The contractor is responsible for ensuring that the ceiling and surrounding civil works remain in good condition during the installation process. If any part of the ceiling or civil structure is damaged during the installation, the contractor must rectify and restore it to its original condition at no additional cost. Any damage caused by the contractor must be repaired to ASEC's satisfaction.
6. The contractor must provide comprehensive documentation for ASEC's approval and training for ASEC personnel on the operation and maintenance of the new sound system, ensuring that the building staff are fully equipped to manage and troubleshoot the system post-installation.

VII. CONTRACTOR QUALIFICATIONS

1. Have at least 5 years' experience in the installation, maintenance and upgrading of sound systems, particularly in office building, commercial areas, or similar facilities. A list of relevant projects must be attached in the submitted document.
2. Have at least 3 successful similar projects, proven by minimum 3 reference letters with good recommendation. Reference letter must be attached in the submitted document.
3. Have a valid business license (SIUP/NIB) or an equivalent government document related to sound systems and/or electronics installations. Licenses must be attached to the submitted document. Submission of additional licenses related to this work will be considered as an added advantage.

4. Have an authorized certification or a similar letter from the principal manufacturer, confirming their authorization to install, maintain, and service the specified sound system brand. Submission of additional certifications related to this work will be considered as an added advantage (i.e. appointed installer or distributor from principal).
5. Have a good knowledge of the project, proven by submitting product details (i.e brochure, etc), work method and schedules that comply with Engineering Standards, Safety Regulations and ASEC requirements.
6. Vendors with Lead on-site engineer that hold verified certification in professional multi-channel electro-acoustic analysis platforms (e.g., Rational Acoustics Smart v8/v9 or equivalent) will be an advantage.

VIII. TERMS OF PAYMENT

The terms of payment for this project consist of:

1. First Payment, Down Payment (DP) 15%.
2. Second Payment of 35% upon the project reaches 50% completion.
3. Final payment of 50% upon the project reaches 100% completion.

IX. DURATION OF SERVICES AND WORK SCHEDULE

The selected vendor shall be committed to completing the work within 2 (two) months and follows the working schedule in accordance with the ASEC procedures as follows:

1. Weekday : 5.00 pm to 10.00 pm.
2. Weekend and holiday : 07.30 am to 10.00 pm.

The works schedule may change as instructed by ASEC.