IEEE P802.11
Wireless LANs

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| IEEE 802.11TGax November 2020 Plenary Meeting Minutes |
| Date: 2020-11-11 |
| Author(s): |
| Name | Affiliation | Address | Phone | Email |
| Yasuhiko Inoue | NTT | * 1. Hikari-no-oka, Yokosuka, Kanagawa 239-0847 Japan
 | +81 46 859 5097 | yasu.inoue.h2k5@gmail.com |
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Abstract

This document contains the minutes from the TGax online meeting during the IEEE 802.11 November 2020 Plenary session.

Revision History:

* R0: Initial version.

**Tuesday, November 3th, 2020, TGax online meeting (16:00 - 18:00 ET)**

1. **The meeting called to order at 16:02 (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
	1. Introduction of TGax chairperson and secretary.
	2. The agenda document doc.11-20/1552r20 is the working document.
2. **Agenda Setting**
	1. Proposed agenda for the TGax online meeting on November 3rd, 2020.
		1. Call meeting to order
		2. IEEE-SA IPR policy and Procedure
		3. Attendance Reminder – Please record your attendance on IMAT (imat.ieee.org)
		4. Minutes Approval
		5. Review the report to EC
			1. https://[mentor.ieee.org/802.11/dcn/20/11-20-1771-00-00ax-p802-11ax-report-to-ec-on-conditional-approval-to-forward-draft-to-revcom.pptx](https://mentor.ieee.org/802.11/dcn/20/11-20-1771-00-00ax-p802-11ax-report-to-ec-on-conditional-approval-to-forward-draft-to-revcom.pptx) - Osama Aboul-Magd
		6. CSD Affirmation
			1. https://[mentor.ieee.org/802.11/dcn/14/11-14-0169-02-0hew-ieee-802-11-hew-sg-proposed-csd.docx](https://mentor.ieee.org/802.11/dcn/14/11-14-0169-02-0hew-ieee-802-11-hew-sg-proposed-csd.docx)
		7. AoB
		8. Adjourn
	2. Chair asked if there is any objection to proceed with this agenda.
		1. Discussion – No discussion
		2. **The agenda for TGax online meeting on November 3rd, 2020 was approved.**
3. **IEEE 802 and 802.11 IPR policy and procedure**
	1. Patent Policy:
	2. Participants have a duty to inform the IEEE - done.
		* Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
		* Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims
	3. Ways to inform IEEE: - done
		* Cause an LOA to be submitted to the IEEE-SA (patcom@ieee.org); or
		* Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
		* Speak up now and respond to this Call for Potentially Essential Patents
		* If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair
		1. Chair asked if anyone in this meeting is aware of any potentially essential patents.
			1. **No potentially essential patent reported.**
	4. Other guidelines for IEEE WG meetings – done
		* All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.
			+ Don’t discuss the interpretation, validity, or essentiality of patents/patent claims.
			+ Don’t discuss specific license rates, terms, or conditions.
				- Relative costs of different technical approaches that include relative costs of patent licensing terms January be discussed in standards development meetings.

Technical considerations remain the primary focus

* + - * Don’t discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.
			* Don’t discuss the status or substance of ongoing or threatened litigation.
			* Don’t be silent if inappropriate topics are discussed … do formally object.
	1. Patent-related information – done
		+ The patent policy and the procedures used to execute that policy are documented in the:
		+ *IEEE-SA Standards Board Bylaws* (http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6)
		+ *IEEE-SA Standards Board Operations Manual* (http://standards.ieee.org/develop/policies/opman/sect6.html#6.3)
		+ Material about the patent policy is available at
		+ [*http://standards.ieee.org/about/sasb/patcom/materials.html*](http://standards.ieee.org/about/sasb/patcom/materials.html)
	2. Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct - done
	3. Participants in the IEEE-SA “individual process” shall act independently of others, including employers - done
	4. IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints - done
1. **Attendance**
	1. <https://imat.ieee.org/>
		1. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
2. **Minutes Approval Motion**
	1. **Motion: Move to approve the TGax CRC minutes in docs:**
* [**https://mentor.ieee.org/802.11/dcn/20/11-20-1415-02-00ax-tgax-crc-teleconference-minutes-september-2020.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-1415-02-00ax-tgax-crc-teleconference-minutes-september-2020.docx) **includes minutes from teleconferences on September 3rd, 22nd, 24th, 29th, 2020.**
* [**https://mentor.ieee.org/802.11/dcn/20/11-20-1522-00-00ax-tgax-september-2020-online-meeting-minutes.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-1522-00-00ax-tgax-september-2020-online-meeting-minutes.docx) **includes minutes from teleconferences on September 7.**
* [**https://mentor.ieee.org/802.11/dcn/20/11-20-1587-05-00ax-tgax-crc-teleconference-minutes-october-2020.docx**](https://mentor.ieee.org/802.11/dcn/20/11-20-1587-05-00ax-tgax-crc-teleconference-minutes-october-2020.docx) **includes minutes from teleconferences October 1st, 6th, 8th, 13th, 15th, 20th, 22nd, 23rd, 27th, 29th, 30th**
	+ 1. **Mover: Yasuhiko Inoue, Second: Menzo Wentink**
		2. **Discussion – no discussion**
		3. **Result: Approved with unanimous consent.**
1. **Review the report to EC on conditional approval to forward to RevCom**
	1. Osama Aboul-Magd (Huawei Technologies), the TGax chairperson, presented the “P802.11ax Report to EC on Conditional Approval to forward draft to RevCom,” based on the submission doc.11-20-1771-01
		1. URL of the document: <https://mentor.ieee.org/802.11/dcn/20/11-20-1771-01-00ax-p802-11ax-report-to-ec-on-conditional-approval-to-forward-draft-to-revcom.pptx>
		2. Summary
			1. The group reviewed the contents of “P802.11ax Report to EC on Conditional Approval to forward draft to RevCom.”
			2. The group reviewed the motion text contained in the agenda file (r19).
		3. Discussion
			1. Current motion includes (a) approval of the report to EC and (b) reaffirmation of the CSD, however, it was suggested to have separate motions for each item. 🡪 Osama to work on it.
		4. Next Step
			1. The doc.11-20-1771 will be approved during the next TGax session and WG closing plenary.
2. **CSD Review**
	1. The group reviewed the “IEEE 802.11 HEW SG Proposed CSD” based on the doc.11-14-0169-02.
		1. URL of the document: <https://mentor.ieee.org/802.11/dcn/14/11-14-0169-02-0hew-ieee-802-11-hew-sg-proposed-csd.docx>
	2. Discussion – no discussion.
	3. Next Step
		1. The CSD will be reaffirmed during the next TGax session and the WG closing plenary.
3. **AoB**
	1. A participant asked if we need a vote to reaffirm the CSD. 🡪 It is included in the motion for the Report to EC.
		1. There was a suggestion to separate the motion to reaffirm the CSD from the report to EC. The TGax chairperson to work on it.
4. **Recess**
	1. TGax online meeting is in recess @ 17:04 until Thursday 19:00 (ET).
5. **Attendees**

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| --- | --- |
| **Name** | **Affiliation** |
| Abdelaal, Rana | Broadcom Corporation |
| Aboulmagd, Osama | Huawei Technologies Co. Ltd |
| Agarwal, Peyush | Broadcom Corporation |
| Akhmetov, Dmitry | Intel Corporation |
| Aldana, Carlos | Facebook |
| An, Song-Haur | INDEPENDENT |
| ANANDAKUMAR, KRISHNASAMY | Maxlinear Inc |
| Asterjadhi, Alfred | Qualcomm Incorporated |
| Au, Kwok Shum | Huawei Technologies Co. Ltd |
| Au, Oscar | Origin Wireless |
| Aygul, Mehmet | VESTEL, IMU |
| Badenes, Agustin | Maxlinear Corp |
| Baik, Eugene | Qualcomm Incorporated |
| Bajko, Gabor | MediaTek Inc. |
| Banerjea, Raja | Qualcomm Incorporated |
| Bapat, Sanjay | Maxlinear |
| Barr, David | Intel Corporation |
| Beg, Chris | Cognitive Systems Corp. |
| Bluschke, Andreas | Signify |
| Boldy, David | Broadcom Corporation |
| Bravo, Daniel | Intel Corporation |
| Cao, Rui | NXP Semiconductors |
| Cariou, Laurent | Intel Corporation |
| Carney, William | Sony Corporation |
| Cepni, Gurkan | Apple, Inc. |
| CHAN, YEE | Facebook |
| Chayat, Naftali | Vayyar Imaging |
| Chen, Na | MaxLinear Corp |
| Chen, Xiaogang | Intel Corporation |
| Cheng, Paul | MediaTek Inc. |
| Cheng, Xilin | NXP Semiconductors |
| CHERIAN, GEORGE | Qualcomm Incorporated |
| Cho, Hangyu | LG ELECTRONICS |
| Chu, Liwen | NXP Semiconductors |
| Chung, Chulho | SAMSUNG |
| Coffey, John | Realtek Semiconductor Corp. |
| Cohn, Daniel | Intel Corporation |
| Cordeiro, Carlos | Intel Corporation |
| Costa, D.Nelson | Peraso Technologies Incorporated |
| Derham, Thomas | Broadcom Corporation |
| DOAN, DUNG | Qualcomm Incorporated |
| Dogukan, Ali | Vestel |
| Doostnejad, Roya | Intel Corporation |
| Eitan, Alecsander | Qualcomm Incorporated |
| Erceg, Vinko | Broadcom Corporation |
| Erell, Assaf | Vayyar Imaging Ltd. |
| Fang, Yonggang | self |
| Fischer, Matthew | Broadcom Corporation |
| Furuichi, Sho | Sony Corporation |
| Gan, Ming | Huawei Technologies Co. Ltd |
| Gao, Zhigang | Cisco |
| Garg, Lalit | Broadcom Corporation |
| Ghosh, Chittabrata | Intel Corporation |
| Gidvani, Ravi | SAMSUNG |
| Haider, Muhammad Kumail | Facebook |
| Hart, Brian | Cisco Systems, Inc. |
| Hervieu, Lili | Cable Television Laboratories Inc. (CableLabs) |
| Hirata, Ryuichi | Sony Corporation |
| Hiroki, Shigeru | Canon |
| Hoffman, Damian | Vayyar Imaging |
| Hsiao, Ching-Wen | MediaTek Inc. |
| Hu, Mengshi | HUAWEI |
| Huang, Guogang | Huawei Technologies Co. Ltd |
| Huang, Lei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| Huang, Po-Kai | Intel Corporation |
| Ibrahim, Mostafa | SAMSUNG ELECTRONICS |
| Inoue, Yasuhiko | NTT |
| Jia, Jia | Huawei Technologies Co. Ltd |
| jiang, feng | Apple Inc. |
| Jiang, Jinjing | Apple, Inc. |
| Jones, Vincent Knowles IV | Qualcomm Incorporated |
| JUNG, MYUNG CHEUL | Pantech Inc. |
| Kamel, Mahmoud | InterDigital, Inc. |
| Kang, Hyunduk | ETRI |
| Kang, Sugbong | Apple, Inc. |
| Kerry, Stuart | OK-Brit; Self |
| Kim, Sang Gook | LG ELECTRONICS |
| Kim, Yongho | Korea National University of Transportation |
| Kim, Youhan | Qualcomm Incorporated |
| Kishida, Akira | NTT |
| Kitazawa, Shoichi | Muroran IT |
| Klein, Arik | Huawei Technologies Co. Ltd |
| Klimakov, Andrey | Huawei Technologies Co., Ltd |
| Kneckt, Jarkko | Apple, Inc. |
| Kureev, Aleksey | IITP RAS |
| Kwon, Young Hoon | NXP Semiconductors |
| Lalam, Massinissa | SAGEMCOM SAS |
| Lan, Zhou | Huawei Technologies Co. Ltd |
| Lansford, James | Qualcomm Incorporated |

**Tuesday, November 5th, 2020, TGax online meeting (19:00 - 21:00 ET)**

1. **The meeting called to order at 19:02 (ET) by Osama Aboul-Magd (Huawei Technologies), the chairperson of 802.11 TGax.**
	1. Introduction of TGax chairperson and secretary.
	2. The agenda document doc.11-20/1552r20 is the working document.
2. **Agenda Setting**
	1. Proposed agenda for the TGax online meeting on November 5th, 2020.
		1. Call meeting to order
		2. IEEE-SA IPR policy and Procedure
		3. Attendance Reminder – Please record your attendance on IMAT (imat.ieee.org)
		4. Review of the Report to EC 11-20/1771 (latest revision)
		5. Motion to approve the report to the EC
		6. Motion to reaffirm the CSD
		7. AoB
		8. Adjourn
	2. Chair asked if there is any objection to proceed with this agenda.
		1. Discussion – No discussion
		2. **The agenda for TGax online meeting on November 5th, 2020 was approved.**
3. **IEEE 802 and 802.11 IPR policy and procedure**
	1. Patent Policy:
	2. Participants have a duty to inform the IEEE - done.
		* Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
		* Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims
	3. Ways to inform IEEE: - done
		* Cause an LOA to be submitted to the IEEE-SA (patcom@ieee.org); or
		* Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
		* Speak up now and respond to this Call for Potentially Essential Patents
		* If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair
		1. Chair asked if anyone in this meeting is aware of any potentially essential patents.
			1. **No potentially essential patent reported.**
	4. Other guidelines for IEEE WG meetings – done
		* All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.
			+ Don’t discuss the interpretation, validity, or essentiality of patents/patent claims.
			+ Don’t discuss specific license rates, terms, or conditions.
				- Relative costs of different technical approaches that include relative costs of patent licensing terms January be discussed in standards development meetings.

Technical considerations remain the primary focus

* + - * Don’t discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.
			* Don’t discuss the status or substance of ongoing or threatened litigation.
			* Don’t be silent if inappropriate topics are discussed … do formally object.
	1. Patent-related information – done
		+ The patent policy and the procedures used to execute that policy are documented in the:
		+ *IEEE-SA Standards Board Bylaws* (http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6)
		+ *IEEE-SA Standards Board Operations Manual* (http://standards.ieee.org/develop/policies/opman/sect6.html#6.3)
		+ Material about the patent policy is available at
		+ [*http://standards.ieee.org/about/sasb/patcom/materials.html*](http://standards.ieee.org/about/sasb/patcom/materials.html)
	2. Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct - done
	3. Participants in the IEEE-SA “individual process” shall act independently of others, including employers - done
	4. IEEE-SA standards activities shall allow the fair & equitable consideration of all viewpoints - done
1. **Attendance**
	1. <https://imat.ieee.org/>
		1. Please indicate the voter status by adding [V] or [NV] before your name on WebEx.
2. **Review of the Report to EC**
	1. Report to EC: <https://mentor.ieee.org/802.11/dcn/20/11-20-1771-03-00ax-p802-11ax-report-to-ec-on-conditional-approval-to-forward-draft-to-revcom.pptx>
	2. Summary
		1. TGax chairperson explained the document and updated the information on unsatisfied comments. 🡪 The document became r4.
	3. Discussion – no discussion
3. **Motion to approve report to EC**
	1. **Motion:**
	2. **Approve document** [**https://mentor.ieee.org/802.11/dcn/20/11-20-1771-03-00ax-p802-11ax-report-to-ec-on-conditional-approval-to-forward-draft-to-revcom.pptx**](https://mentor.ieee.org/802.11/dcn/20/11-20-1771-01-00ax-p802-11ax-report-to-ec-on-conditional-approval-to-forward-draft-to-revcom.pptx) **as the report to the IEEE 802 Executive Committee on the requirements for conditional approval to forward P802.11ax to RevCom, and**
	3. **Request the IEEE 802 Executive Committee to conditionally approve forwarding P802.11ax to RevCom.**
		1. **Mover Yasuhiko Inoue, Second: Youhan Kim**
		2. **Discussion – no discussion**
		3. **Result: Y/N/A = 25/0/1, motion passes.**
4. **Review of CSD**
	1. CSD:
	2. TGax chairperson showed the latest version of CSD
5. **Motion to reaffirm the CSD**
	1. **Motion: Move to Re-affirm the TGax CSD in** [**https://mentor.ieee.org/802.11/dcn/14/11-14-0169-03-0hew-ieee-802-11-hew-sg-proposed-csd.docx**](https://mentor.ieee.org/802.11/dcn/14/11-14-0169-03-0hew-ieee-802-11-hew-sg-proposed-csd.docx)
		1. **Mover Yasuhiko Inoue, Second: Edward Au**
		2. **Discussion – no discussion**
		3. **Result: Y/N/A = 23/0/3, motion passes.**
6. **Plan for the next meeting**
	1. Two teleconferences are planned during the week on Tuesday and Thursday.
	2. One TGax CRC teleconference was planned on Friday, November 13th after the close of the recirculation ballot.
7. **AoB**
	1. No other business to conduct.
8. **Adjourn**
	1. TGax meeting during the IEEE 802 November 2020 has adjourned @ 19:29 (ET).
9. **Attendees**

|  |  |
| --- | --- |
| **Name** | **Affiliation** |
| Abdelaal, Rana | Broadcom Corporation |
| Aboulmagd, Osama | Huawei Technologies Co. Ltd |
| Adachi, Tomoko | TOSHIBA Corporation |
| Agarwal, Peyush | Broadcom Corporation |
| Agrawal, abhishek | ON Semiconductor |
| Aio, Kosuke | Sony Corporation |
| An, Song-Haur | INDEPENDENT |
| ANANDAKUMAR, KRISHNASAMY | Maxlinear Inc |
| Anwyl, Gary | MediaTek Inc. |
| Asai, Yusuke | NTT |
| Asterjadhi, Alfred | Qualcomm Incorporated |
| Au, Kwok Shum | Huawei Technologies Co. Ltd |
| B, Hari Ram | NXP Semiconductors |
| Baek, SunHee | LG ELECTRONICS |
| Chen, Cheng | Intel Corporation |
| chen, jindou | Huawei Technologies Co., Ltd |
| Chen, Zheng | Huawei Technologies Co., Ltd |
| CHUN, JINYOUNG | LG ELECTRONICS |
| Chung, Chulho | SAMSUNG |
| Coffey, John | Realtek Semiconductor Corp. |
| Ding, Baokun | Huawei Technologies Co. Ltd |
| Ding, Yanyi | panasonic corporation |
| Dong, Xiandong | Xiaomi Inc. |
| Du, Rui | Huawei Technologies Co. Ltd |
| Duan, Ruchen | SAMSUNG |
| ElSherif, Ahmed | Qualcomm Incorporated |
| Feng, Xiang | Keysight Technologies |
| Fischer, Matthew | Broadcom Corporation |
| Gan, Ming | Huawei Technologies Co. Ltd |
| Ghaderipoor, Alireza | MediaTek Inc. |
| Gidvani, Ravi | SAMSUNG |
| Gong, Bo | Huawei Technologies Co. Ltd |
| Goto, Fumihide | DENSO |
| Guo, Yuchen | Huawei Technologies Co. Ltd |
| Hamilton, Mark | Ruckus/CommScope |
| HAN, Xiao | Huawei Technologies Co.,  Ltd |
| Hirata, Ryuichi | Sony Corporation |
| Hiroki, Shigeru | Canon |
| Holland, Oliver | Advanced Wireless Technology Group (AWTG), Ltd. |
| Hong, Hanseul | WILUS Inc. |
| Hsieh, Hung-Tao | MediaTek Inc. |
| Hsu, Chien-Fang | MediaTek Inc. |
| Huang, Lei | Guangdong OPPO Mobile Telecommunications Corp.,Ltd |
| Huang, Po-Kai | Intel Corporation |
| Hurtarte, Jeorge | Teradyne, Inc. |
| Ikegami, Tetsushi | Meiji University |
| Inohiza, Hirohiko | Canon |
| Inoue, Yasuhiko | Nippon Telegraph and Telephone Corporation (NTT) |
| Jeon, Eunsung | SAMSUNG ELECTRONICS |
| Ji, Chenhe | Huawei Technologies Co., Ltd |
| JUNG, MYUNG CHEUL | Pantech Inc. |
| Khan, Naseem | Leidos Engineering. LLC |
| Kim, Jeongki | LG ELECTRONICS |
| Kim, Myeong-Jin | SAMSUNG |
| Kim, Sanghyun | WILUS Inc. |
| Kim, Yongho | Korea National University of Transportation |
| Kim, Youhan | Qualcomm Incorporated |
| Kishida, Akira | Nippon Telegraph and Telephone Corporation (NTT) |
| Kitazawa, Shoichi | Muroran IT |
| Ko, Geonjung | WILUS Institute |
| Kondo, Yoshihisa | Advanced Telecommunications Research Institute International (ATR) |
| Kwak, Jin-Sam | WILUS Inc. |
| Li, Jianhui | Huawei Technologies Co.,  Ltd |
| Li, Nan | ZTE Corporation |
| Li, Yunbo | Huawei Technologies Co. Ltd |
| Lim, Dong Guk | LG ELECTRONICS |
| Lin, Wei | Huawei Technologies Co. Ltd |
| Lindskog, Erik | SAMSUNG |
| LIU, CHENCHEN | Huawei Technologies Co. Ltd |
| Liu, Jeff | Broadcom Corporation |
| Liu, Jianfei | HUAWEI |
| Liu, Ying | NXP Semiconductors |
| Lu, kaiying | MediaTek Inc. |
| Lu, Liuming | ZTE Corporation |
| Luo, Chaoming | Beijing OPPO telecommunications corp., ltd. |
| Mashimo, Hiroshi | Canon |
| Moon, Juseong | Korea National University of Transportation |
| Murti, Wisnu | SeoulTech |
| NAGATA, KENGO | Nippon Telegraph and Telephone Corporation (NTT) |
| Nakano, Hiroki | CAHI Corporation; Kyoto University |
| Nakano, Takayuki | Panasonic Corporation |
| Nam, Junyoung | Qualcomm Incorporated |
| NANDAGOPALAN, SAI SHANKAR | Cypress Semiconductor Corporation |
| noh, yujin | Newracom Inc. |
| Nurani Krishnan, Neelakantan | Qualcomm Incorporated |
| Oh, Hyun Seo | Electronics and Telecommunications Research Institute (ETRI) |
| Okada, Hiraku | Nagoya University |
| Ouchi, Masatomo | Canon |
| OZDEN ZENGIN, OZLEM | VESTEL |