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## TERMS AND CONDITIONS OF TECHNICAL SUPPORT SERVICES FOR FURUKAWA EQUIPMENT

### Presentation:

These terms and conditions apply to the technical support services provided by **Furukawa Electric LatAm S.A.** and to its subsidiaries and affiliates, a Brazilian corporation with private rights. Company properly registered at the “*Cadastro Nacional de Pessoas Jurídicas do Ministério da Fazenda*” under the number 51.775.690/0001-91, located at Rua Hasdrubal Bellegard, nº 820, Cidade Industrial de Curitiba, in the city of Curitiba, state of Paraná in Brazil. These terms and conditions govern the rights and obligations of FURUKAWA and Customer in relation of the full support of the described services. The T&C covers the product lines described in APPENDIX 1.

These T&C apply to the Egypt, Ghana, Indonesia, Kenia, Maldives Island, Morocco, Nigeria, Qatar, Republic of South Africa, Saudi Arabia, Spain, Thailand, Turkey and United Arab Emirates territory.

### DEFINITIONS:

**T&C:** Terms and conditions applicable to the technical support services described on this document;

**FURUKAWA:** FURUKAWA ELECTRIC LATAM S.A., subsidiaries and affiliates;

**FURUKAWA products:** products sold by FURUKAWA, directly or through its distribution channels;

**SSC:** Support & Service Center: Structure composed by professionals, means and equipment to provide service to FURUKAWA customers;

**FURUKAWA Support Portal:** Furukawa website **[www.furukawalatam.com](http://www.furukawalatam.com)** created to provide support for customers;

**Support Client:** Professional or Third-Party Service that acts on behalf of the company that owns the FURUKAWA product and have the legal capacity and authority to bind the entity to these terms and conditions. The client of support will be the main point of contact with the SSC and is responsible for the ticket opening and ease of access of the SSC professionals;

**Ticket:** Support request, with an exclusive identification, associated with a problem reported by the support client. The identification of the ticket is generated automatically through the control system of tickets and should be informed every time the support client interacts with the SSC. The ticket contains all the information of the service provided by the SSC, sent documents and others;

**SLA:** Service Level Agreement determined by FURUKAWA;

**NT:** Technical Note – technical document to detail the problem or the specific characteristic;

**Local Start up:** First activation of a network on the site of the customer;

**Firmware:** Software that provides control, monitoring and data manipulation of engineered products and systems;

**Firewall:** It is a network security system that monitors and controls the incoming and outgoing network traffic based on predetermined security rules;

**VoIP:** Voice over Internet Protocol it enables people to use the Internet as the transmission medium for telephone calls by sending voice data in packets using IP;

**Serial Number:** Is the number indicating place in a series and used as a means of identification of the equipment;

**Skype:** Software of property and responsibility of a third-party company, used by the technical department of FURUKAWA that allows communication through the internet by voice and video connections;

**TeamViewer:** Software of property and responsibility of a third-party company, used by the technical department of FURUKAWA that allows remote access, desktop sharing, online conference and file transfer between computers;

**Trial:** Evaluation period;

**Try-and-buy:** Program where the client can try the equipment for a limited amount of time and then decides if it wants to purchase the product. Requires a specific and individual contract for each customer.

**DoS Attack:** denial-of-service attack is a cyber-attack where the perpetrator seeks to make a machine or network resource unavailable to its intended users by temporarily or indefinitely disrupting services of a host connected to the Internet;

#### **Technical Support and Services included:**

- **Standard Support**
  - Remote support through telephone, *Skype*®, *TeamViewer*® and others;
  - Duration: until 3 years or limited to the product life cycle from the issuance of the invoice;
  - Standard Service Hours: From 8:00 a.m. to 5:00 p.m. local time from Monday to Friday, except on federal holidays;
  - Access to the FURUKAWA Support Portal;
  - Limited to 5 tickets per month;
  - Service Level Agreement (SLA) with severity classification of the occurrence (Critical, Majority, Minority and Informative) and service levels N1 and N2 according to appendix II;
- **Premium 24x7**
  - Acquisition done by contract or commercial proposal;
  - Remote support via telephone, *Skype*®, *TeamViewer*®, etc;
  - Duration: 1-year term from the issuance of the Service Invoice, with possibility of simultaneous sale of 3 codes, that is, 3 years in total, when purchased together with equipment and subsequent renewals limited to the product's life cycle. The term is defined in the contract;
  - Possibility of opening, up to 20 tickets per month distributed as follows:
    - 15 tickets in business hours (from 8:00 a.m. to 5:00 p.m. local time) from Monday to Friday - except national holidays;
    - 5 tickets at other times (24x7 complement), in this case, the service is applicable only to support Furukawa equipment problems, and the support is not covered for equipment configuration, migration, management or monitoring problems;
  - Service Level Agreement (SLA) with severity classification of the occurrence (Critical, Majority, Minority and Informative) and service levels N1 and N2 according to appendix III;

#### **Levels of Support:**

All the tickets initialize as N1 and according to the SLA are classified as N2 and N3 in order to meet the required time.

<b>N1</b>	Support to settings and answer questions, verification of the installation items (grounding, cleaning, connections and others according to the Technical Note), remote access into the client system to check for settings updates, profiles and others. Help the support solicitant find equipment documentation.
<b>N2</b>	Evaluation of the interference of other system and equipment on the operation of FURUKAWA equipment, search for unexpected behaviors on protocols and transmission packages, lab simulations to confirm errors and find alternative solutions, fault location on firmware, technical reports and correction requests for the development department at FURUKAWA.
<b>N3</b>	Evaluation of errors on firmware and hardware, development of new fixed firmware or alternative, test of new firmware.

#### Requirements to Receive Support Services:

1. The support client must be technically capable, received proper training from FURUKAWA for its product and have knowledge of the network and equipment that will receive the technical support. People without the proper ability or needed knowledge may prevent the solution of the problem and best development of the support service;
2. The support client must have the documentation that proves the ownership of the product, the product serial number, warranty and support and services that have been bought and/or hired previously;
3. The support client must provide means for the remote access through the internet using Skype® and TeamViewer®, have the permissions required by its systems, access to the facilities and be able to unlock the protection systems and firewall that might prevent the required access by the professional of the SSC;
4. The equipment must be operating according to the environmental, electric and other conditions required by its technical specifications (check APPENDIX V). The network topology and configuration with other services should be also operating according to its homologation and original projects;
  - a. The use of FURUKAWA equipment with non-homologated systems (VoIP, Video and others) might depend on the FURUKAWA development department evaluation and will not guarantee the compatibility neither a defined time for the solution;
5. The support client must provide information regarding the network topology, connectivity, services being used and any relevant information that might be related to the network/equipment problem;
6. The equipment firmware must be updated to the last version available on the FURUKAWA Support Portal. A capable professional should have performed the update according to the technical notes and manual available at the FURUKAWA Support Portal.
  - a. Firmware updates required during the support, that are available prior to the ticket opening date, will not be computed into the SLA (when applicable);
7. The support client must keep its access control policies based on passwords, Firewall, good practices and others to avoid malicious or unauthorized accesses;
  - a. FURUKAWA is not responsible in case of internet attacks such as DoS, and its variations, firewall deactivation and others that affect the operation of FURUKAWA equipment. Being able, and in FURUKAWA sole discretion, the professional of the SSC will put its best effort to help restore the network operation on what regards FURUKAWA equipment;
  - b. The extension of the time and volume of internet attacks are unpredictable and for these reasons the SLA does not apply on these occasions.
8. FURUKAWA will only provide services if the support client fulfills all the requirements previously established.

#### Requirements for 24x7 Premium Support type:

1. All the requirements contained in the Standard 8x5 type;
2. Valid contract for the service that must be communicated to the SSC assistant at the time of opening the ticket
  - a. Requests for these support services will only be achieved by presenting the contract number and the type of services, duly in force;
3. Furukawa will only provide the service when verified by this applicant with compliance with the requirement set forth in point 1;

#### **Conditions to receive Technical Support:**

The professionals of the SSC will provide technical support according to the contract and cannot offer services unspecified on contract.

1. The technical support is restricted to problems related to FURUKAWA products and systems. Once determined by FURUKAWA that the problem it's due another equipment connected, improper use, incorrect installation, not following the technical recommendations or application and services that are not from FURUKAWA products the ticket will be closed;
  - a. Every activation of the technical support, even when proved that the problem is not related to FURUKAWA products will be computed and subtracted of the maximum amount of tickets according to the contract of support;
  - b. Furukawa SSC will not perform activities of network management such as profiles changes, provisioning of new subscribers and other services that are not related FURUKAWA equipment or systems. The costumer's professionals or the third-party professional hired by the customer must perform these operation
2. The SSC will treat each subject on a separated ticket. If during the support a problem unrelated to the first occurrence comes up the support client must open a new ticket to be treated separately.
3. Problems due incorrect project specification, incompatibility of topology, systems and services where the technical specifications were not taken into consideration, homologation or previous specification might not receive support by the SSC. FURUKAWA will do its best effort forwarding requests of changes, compatibly and others to its application, product and development departments but it will not be responsible for the compliance with the SLA (when applicable);
4. The SSC professional will not perform any change, configuration or any action on equipment from other manufacturers. When needed the evaluation of compatibility and connectivity, configuration between FURUKAWA equipment and other manufacturer it will be necessary the local or remote cooperation of a certified professional of the manufacturer of the equipment for a team operation with the SSC FURUKAWA. This operation might be invoiced separately after checking with the support client;
5. The SSC may not provide assistance to damaged, modified or adapted, totally or partially, equipment;
6. The SSC cannot provide assistance for problems caused due accidents, improper transportation, improper use, modifications or improvements attempts, materials that do not satisfy the specifications, use of the product for applications that the product was not designed for, any problems caused by negligence and improper application of the final user;
7. The SSC cannot provide assistance to third party products (hardware, software, cabling infrastructure) or problems associated with such elements, also products that the user can easily physically install, like SFPs and others;
8. Upon hiring 24x7 Premium Support customer will receive personal or virtually guidance on the terms and conditions of this document from an SSC Professional. Everyone involved in the operation, maintenance, or that might request support from Furukawa as well as contractors must follow this presentation;

9. Customers that are part of development programs for new products, tests, trials, homologations, PoC, try-and-buy, prototypes and similar are subject to specific terms and conditions according to each case, in these cases this document is not applicable.
10. If the SSC requests additional information or actions for the ticket analysis and the support client does not provide it in less than one-hour prior to the SLA defined for the RESTORE operation of the network (see APPENDIX II) FURUKAWA will not account the SLA.
11. If the support client needs an equipment replacement, the SSC professional will indicate the procedure but the support client will be responsible for the execution of it. The standard support does not predict spare parts.
12. All Support will be provided in the English language unless agreed otherwise. The parties confirm that they have requested that this Agreement and all related documents be drafted in English at the express wishes of the parties.
13. Equipment and systems that are in installation progress, start of operation, commissioning, extension, services addition and others out of normal operation cannot be submitted to SLA due to the unpredictability of external interfering factors inherent to these occasions.
14. FURUKAWA will only provide services if the costumer fulfills all the requirements previously established.

#### **End of the Equipment life cycle**

1. Discontinued equipment or with the end of its life cycle according to the informative of the responsible area of the product in FURUKAWA will not receive technical support;
2. FURUKAWA will decide about new firmware updates and technical notes regarding discontinued equipment. FURUKAWA will perform equipment updates according to its criteria.

#### **Jurisdiction and applicable law**

1. In order to resolve any divergences arising from these Technical Support Terms and Conditions, the parties now elect the Forum of Curitiba, State of Paraná, Brazil and the Brazilian Legislation to govern it.

**APPENDIX I: PRODUCT LINES COVERED BY THE TECHNICAL SUPPORT SERVICE AND TYPES OF SUPPORT.**

Coverage		Support Modalities	
Line	Products	Standard 8x5	Premium 24x7
<b>GPON</b>	FK-OLT-G2500 FK-OLT-G4S FK-OLT-G8S FW-OLT-LD3032 OLT LD3016 OLT LD3008 OLT LW3008c OLT LD3096	Included	Included
	FK-ONT-G400R FK-ONT-G420R FK-ONT-G420W FK-ONT-G421W FK-ONT-G400B/PoE S2 FK-ONT-420W AC/S2 ONT100 LD1102W LD420-10R LW110-44B LD322-42W LD421-21WV LD421-21W LD111-21R 423-41W/AC LW710-80BP 630-10B	Included	Included
<b>Software</b>	CONSCIUS MAP MONITORING LASERWAY MANAGER	Included	Included
<b>WIFI</b>	FWC-1101 FKAP-220	Included	NA
<b>Notes:</b> NA: Not Available			

**APPENDIX II: SLA (SERVICE-LEVEL AGREEMENT) FOR 8X5 STANDARD SUPPORT:**

SLA	Response	Restore	Solution
<b>Critical</b>	8 working hours	16 working hours	Emergency firmware release or next planned firmware release
<b>Major</b>	12 working hours	24 working hours	Next planned firmware release
<b>Minor</b>	16 working hours	32 working hours	Planned firmware release
<b>Informative</b>	24 working hours	-	-

Ticket Severity		Action	
<b>Critical</b>	Outages, total or partial unavailability of the network and/or equipment for high priority applications, high impact on the services. Requires immediate action to correct the problem.	<b>Response</b>	Time elapsed since the problem notification arrived at FURUKAWA SSC, first diagnosis, severity and forwarding of the problem to the proper team for solution.
<b>Major</b>	Partial or intermittent availability of the network and/or equipment for important applications, impact on services. Usually has a workaround.	<b>Restore</b>	Time until the service is restored by a workaround or temporary solution.
<b>Minor</b>	Network and/or equipment intermittence on low priority applications, low impact on the services. The problem is usually tolerable during the use of the services.	<b>Solution</b>	Time until the permanent solution of the problem and ticket closure.
<b>Informative</b>	Documentation requests, references and general information, no impact on the services.		

1. The goal of the support is to fulfill 90% of the SLA.
2. FURUKAWA technical support will determine the ticket severity after the description of the situation by the support solicitant.

**APPENDIX III: SLA (SERVICE-LEVEL AGREEMENT) FOR 24X7 PREMIUM SUPPORT:**

SLA	Response	Restore	Solution
<b>Critical</b>	1h30	8h	Emergency firmware release or next planned firmware release
<b>Major</b>	6h	16h	Next planned firmware release
<b>Minor</b>	9h	24 working hours	Planned firmware release
<b>Informative</b>	12h	-	-

Ticket Severity		Action	
<b>Critical</b>	Outages, total or partial unavailability of the network and/or equipment for high priority applications, high impact on the services. Requires immediate action to correct the problem.	<b>Response</b>	Time elapsed since the problem notification arrived at FURUKAWA SSC, first diagnosis, severity and forwarding of the problem to the proper team for solution.
<b>Major</b>	Partial or intermittent availability of the network and/or equipment for important applications, impact on services. Usually has a workaround.	<b>Restore</b>	Time until the service is restored by a workaround or temporary solution.
<b>Minor</b>	Network and/or equipment intermittence on low priority applications, low impact on the services. The problem is usually tolerable during the use of the services.	<b>Solution</b>	Time until the permanent solution of the problem and ticket closure.
<b>Informative</b>	Documentation requests, references and general information, no impact on the services.		

1. The goal of the support is to fulfill 90% of the SLA.
2. FURUKAWA technical support will determine the ticket severity after the description of the situation by the support solicitant.



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**APPENDIX IV: MEANS OF CONTACT WITH THE TECHNICAL SUPPORT - SSC**

Website: [support.furukawatam.com](http://support.furukawatam.com)

#### **APPENDIX V: REFERENCE DOCUMENTATION**

- PS00004: 24X7 TECHNICAL SUPPORT;
- TIA-568-D *COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARD* (series);
- ISO/IEC DIS 11801 *Information technology -- Generic cabling systems for customer premises* (series)
- Other technical notes and specific manuals are available on the FURUKAWA support portal.
- The customer must follow local regulations related to security, occupation, electricity and any other that might affect the equipment installation;

**NOTE:** Check the last version/review of each document, on the FURUKAWA Support Portal and on the standard, laws and guides organizations.