

Tilgin

Services Description Customer Support - Optional Elements

2012

Introduction

The following content and information will give the reader an insight in what complementary services Tilgin can provide in relation to the Support Service portfolio.

The intention with this service summary is to give the reader an overview of the content and purpose of each possible service element and what benefits it will bring.

All below described elements should be seen as a complement to Tilgin's Support Service that can be delivered in three (3) different shapes; SILVER, GOLD or PLATINUM. All with different content and service lead-times connected to it.

The overall service mix (Support Service + Optional Elements) will ensure that operators will receive adequate support based upon their unique network solution, environment and needs.

Please see and treat below elements as complements rather than mandatory elements that operators can connect to their overall service scope.

The full possible scope of the Service portfolio is built upon a modular set-up that maximizes the flexibility for customers to receive the correct support level based upon their unique requirements and needs.

Table of Contents

Introduction	1
1. Educational Services	3
2. Product Trial Services	3
3. Fast Track Service	4
4. Integration Services	4
5. Local Support Service	5
6. Software Customization Service	5
7. ACS Health Check Service.	6
8. ACS Migration & Upgrade Service	7
9. RMA / Screening Service	7
10. ACS High Availability (HA) Implementation & Integration Service	8
11. Hosting Services	9

1. Educational Services

Tilgin provides standard and tailored training sessions that are based upon customer needs and wishes. The training is typically comprised of both a theoretical- as well as a practical hands-on session. This enables customers to quickly get up to speed within the areas of interest.

Each training session is between one (1) and three (3) days long, but of course depending upon topics covered, content depth and customer needs.

Examples upon topics that can be covered in one or several sessions are;

- Product Training
- Operational Best Practices
- TR069 (in relation to Tilgin products)
- Hands-on Experience
- Trouble shooting techniques
- Configurations via ACS and WebGUI

In addition, Tilgin can through partners provide general training programs in areas such as network technologies and design, TR-069 modeling and support, SIP, IPTV, and IP Multimedia Subsystem (IMS) strategies. The purpose of all our training programs is to help customers ramp up the competence as quickly as possible.

Educational Services are applicable in combination with SILVER, GOLD or PLATINUM Support agreements.

2. Product Trial Services

For customers wanting to evaluate a new market concept, service or solution, Tilgin offer a product trial service. This program is milestone driven and touches upon all functions required for a potential mass launch of a new product, feature or service.

The Product Trial is simply a reduced scope which defines, tests, and launches these services to a much smaller group of customers. This service allows customers to try Tilgin's ACS and CPEs, including technical support.

With Tilgin's Product Trial service, we take the driver seat and help you navigate through every step of a fully supported product trial (up to 100 friendly users). At the

end of the trial, there is a review, product acceptance checklist, and feedback loop that close out this project.

Once the Product Trial is successful, a general deployment will follow with a much higher likelihood of success.

3. Fast Track Service

Tilgin's Fast Track Service is an element intended to help existing or new customers with a fast and efficient installation/integration of new products, software or features within a customer's network.

The Service is always dimensioned based upon specific customer requirements or needs and by that one service delivery is never like any other. Each delivery is tailored as the customer sees fit.

During a Fast Track project, Tilgin engineers will support and work with the customer's personnel in their implementation and/or configuring upon the Tilgin delivered products. The grade of Tilgin's responsibility is up for definition prior to work starting.

All work can be performed remotely or upon customer request, on-site.

Fast Track Services are only applicable in combination with GOLD or PLATINUM Support agreements.

4. Integration Services

One very important aspect of Tilgin's service portfolio is to secure interoperability with other manufacturers' network products.

To develop and maintain an environment that is always connected and reachable within the provider's network, Tilgin offers an Integration Program to connect its products to other solutions (and vice versa). Among these projects, Tilgin offers a service element that is called VIP (ACS Interoperability Program).

A VIP will enable non-Tilgin TR-069 compatible CPEs to work bi-directionally with our ACS solution (ACS). During a VIP, Tilgin performs TR-069 integrations of CPEs or other network devices (such as telephones or radio equipment) with our ACS solution (ACS), to achieve a connection via remote management.

In addition to a VIP, customers can also request projects “in the other direction”, meaning making Tilgin’s CPEs being interoperable with another third-party TR-069 ACS. In short, import Tilgin devices into an already established network environment.

Integration Services are applicable in combination with SILVER, GOLD or PLATINUM Support agreements.

5. Local Support Service

Normally Tilgin is supporting all customers remotely, but this specific service element, “on-site support”, makes it possible for a consultant to sit with the customer on their premises.

If for any reason a customer wishes or requires a temporarily local support (on-site) Tilgin can under this scoping satisfy such need. Again such service will be highly customized and based upon unique demands from case to case.

With the Local Support, customers receive a dedicated Tilgin consultant working at the requested site, side-by-side with the customer personnel for a specific purpose and dedicated time. In relation to the on-site engineer(s), Tilgin will always support the customer remotely from the Professional Services team located in Sweden.

Local Support Services are applicable in combination with SILVER, GOLD or PLATINUM Support agreements.

6. Software Customization Service

Tilgin understands that standard delivered software and functionality might not always be according to customer needs. With that in mind, Tilgin has created a service element that aims to support customers in need of software customizations and/or adaptations.

Customers are welcome to initiate a discussion around possible needs and wishes with Tilgin, where we together explore the possibility for changes and customizations.

Typically all Software Customization projects are based upon a specific scope with specific requirements which generate a unique delivery each and every time.

Each case and requirement will be evaluated separately for to understand how and if such customization will affect the overall standard set-up and configuration.

Software Customization Services are only applicable in combination with GOLD or PLATINUM Support agreements.

7.ACS Health Check Service.

A proactive health check program that ensures the customer installed ACS system is as functional and streamlined as possible.

Tilgin’s experience shows that it is not uncommon for customer’s ACS systems to quickly become outdated in regards to software release & critical operational settings. This can, and in the long run will, cause operational problems that can be expensive and time consuming to resolve.

During this service the customer moves over the responsibility to Tilgin to perform the regular ACS health check.

Each month, one of Tilgin’s professional services professionals will login to the customer ACS (from remotely) and begin to run a protocol of verifying the general health of the system.

Prior to such log-in, Tilgin’s representative will schedule a time-slot within the customers IT maintenance window. That to eliminate the operational disturbance, and guarantee a secure process.

The program is broken up into three main areas and activities with the following tasks included and performed:

Pre-Upgrade Tasks	Maintainence Upgrades	Hardware Re-installation
Full System Diagnostics & Check	Maintainence New Release Upgrades	Used For Emergencies or H/W Moves
HDD and CPU Utilization	Separate Pre-Upgrade System Check	New/Fixed Hardware Dimensioning
MySQL Database Cleanup & Check	Upgrade Staging on Tilgin Server	SLES & Java Installation Verification
Backup, Operations Log, Settings Check	Customer LAB Upgrade Completed	Fully Restoring Production System
Assist in Offsite Backup Storage	Production Server Upgrade Performed	24 Hour Post-Fix Monitoring

ACS Health Check Services are only applicable in combination with GOLD Support agreements (included as a separate service element in the PLATINUM Support agreement).

8.ACS Migration & Upgrade Service

A Project based service that helps customer to upgrade existing ACS system.

The content of the service will differ based upon customer needs, but will in general include everything from upgrading existing ACS software to latest release to a physical/virtual ACS system migrations. For example:

- Migration from a ACS 4 to a ACS 5 or ACS 6 system
- Migration from Standalone to High Availability ACS System
- Migration from Standalone to Cluster ACS System for high load purposes
- Migration from ACS system on a new HW platform for performance boost
- Management Protocol Migration from Recon to TR-069

The above tasks are required to be done in a live customer's deployment environment and have a complex procedure that requires special planning, experience, and skills.

Tilgin will be able to help customers' transfer or merge several ACS databases along with users to a new system environment while preserving all user configurations with a minimum of downtime.

As a result of Tilgin Professional Services direct involvement, Tilgin takes the full responsibility for a successful outcome and by that reduces the risk from the customer.

Migration & Upgrade Services are only applicable in combination with GOLD and PLATINUM Support agreements.

9.RMA / Screening Service

Product returns are a costly business and often unnecessary.

What has been recorded from the field is that it is a high reported number of "no fault found" (NFF) cases. Meaning end-users has reported products to be faulty, while investigations and tests show a fully functional unit.

These NFF cases could have been avoided if the customer has a method of pre-check the products and software prior to contacting the manufacturer. Meaning logistic, personnel and test costs could have been decreased to a minimum.

To support customers solving above problem, Tilgin has developed a test station for screening of end-customer reported CPE errors. The purpose is to test and rule out

units which are in fact not faulty or which have been affected by software-related errors. That is done by a stepwise process and examination (control and check) of each HW component in the CPE and after such test the customer will receive information of hardware fault or not.

Screening CPEs that are returned from End Users is a fast, cheap and efficient way to find and verify if there in fact are hardware & software errors before sending them to the Tilgin repair center. Such process and method will help customers to cut the logistic costs and save valuable time.

Leasing of a test station is a cost-effective way to reduce RMA expenses.

RMA / Screening Services are only applicable in combination with GOLD or PLATINUM Support agreements.

10. ACS High Availability (HA) Implementation & Integration Service

For customers already using VCM as a standalone solution and wanting to have a more robust setup, Tilgin offers the ACS High Availability Implementation and Integration Service. The VCM Redundancy Solution provides cost-effective carrier-grade fail-over protection through a robust service monitoring and guarantees operational continuity by eliminating any single point of failure. In addition maintenance activities, such as hardware, network, OS, or application upgrades can also be carried out without any service interruption time.

VCM HA Solution implements two symmetrically configured nodes in active/passive mode. The passive node is in hot-standby state, ready to take over the service whenever any system failure occurs. The fail-over is totally automatic and will occur instantaneously. The automatic fail-over is utterly transparent to all managed devices and also to any external system that connects to VCM through the north bound interface, i.e. VCM Connector.

High availability (HA) is achieved by configuring a configured as several front-end servers back-end server such that a failure in any front end server is compensated for by removing it and re-directing CPE traffic to another one.

11. Hosting Services

Hosting services is a solution for operators that want to get started in a very fast and easy way.

In this case Tilgin provides a possibility for a ACS customer to get started with ACS Cloud Management within minutes and without the initial CAPEX investment.

Instead of customers investing in server hardware and operating system software for an ACS, Tilgin host this service on its own server and provide the service on behalf of the customer.

For the trials and small scale deployments this is an excellent solution that minimizes the up-front CAPEX expenditures.

The core benefits with Tilgin's Hosting Services are;

- Immediate deployment of ACS (in Tilgin's secure environment)
- Lower start-up and implementation cost
- The latest ACS software with all available features (for Gold and Platinum Support customers only)
- Tilgin administration work around actual handling of the solution

Hosting Services are applicable in combination with SILVER, GOLD or PLATINUM Support agreements.