

The easyWISP EZ-Cloud provides the billing, subscriber management and network supervision functionality that a Wireless Internet Service Provider (WISP) business requires, without ongoing charges. Free access to an easyWISP EZ-Cloud service account is included with each easyWISP access controller.

### easyWISP EZ-Cloud Management Feature Summary

**Sales:** Add and manage subscribers.

**Provisioning:** Create work orders to schedule subscriber installations..

**Activation:** Activate new subscribers onto the network.

**Authentication:** The CPE MAC address is entered to authenticate the subscriber.

**Subscriber rate plans:** Create multiple cost/performance plans for subscribers to choose.

**Fixed broadband billing:**

Subscriber pre- and post-paid billing, with invoicing, collection notification and past-due automatic disable.

**Mobile broadband service:**

Access code generation and authentication for a non-subscriber Hotspot service.

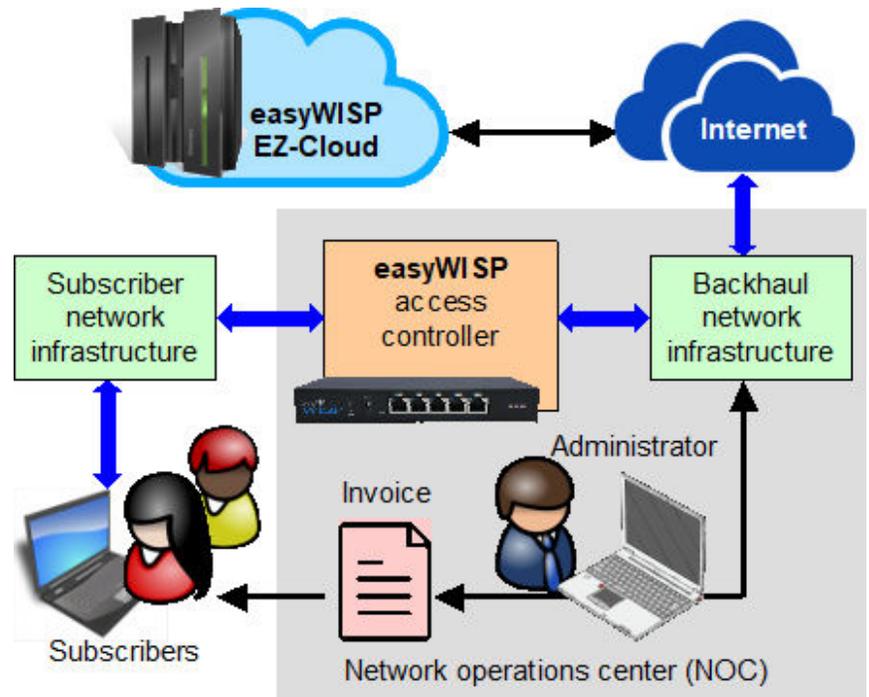
**Network monitoring:** Detection and alarm of easyWISP gateway and subscriber network to CPE data link failures.

**Customer relationship management:**

A CRM portal that subscribers use to access account data and submit a support request.

**Helpdesk:** Support staff respond to ticket requests, and escalate issues to other staff and management.

**Reports:** Report categories include billing, maintenance, data traffic and support.



### The easyWISP EZ-Cloud management system

The easyWISP EZ-Cloud management system was designed using telecommunications industry best practices; the OSS/BSS process model for telecom business management. The easyWISP EZ-Cloud provides all the systems functionality that is required to manage a WISP business. The easyWISP EZ-Cloud is integrated with the easyWISP access controller that is installed at the Network Operations Center (NOC) to manage the flow of subscriber data traffic. An easyWISP EZ-Cloud account can manage multiple easyWISP access controllers concurrently for WISP's that have more than one NOC, or else install access control at the PtMP tower. There is no limit to the number of subscribers that can be managed by a free easyWISP EZ-Cloud account.

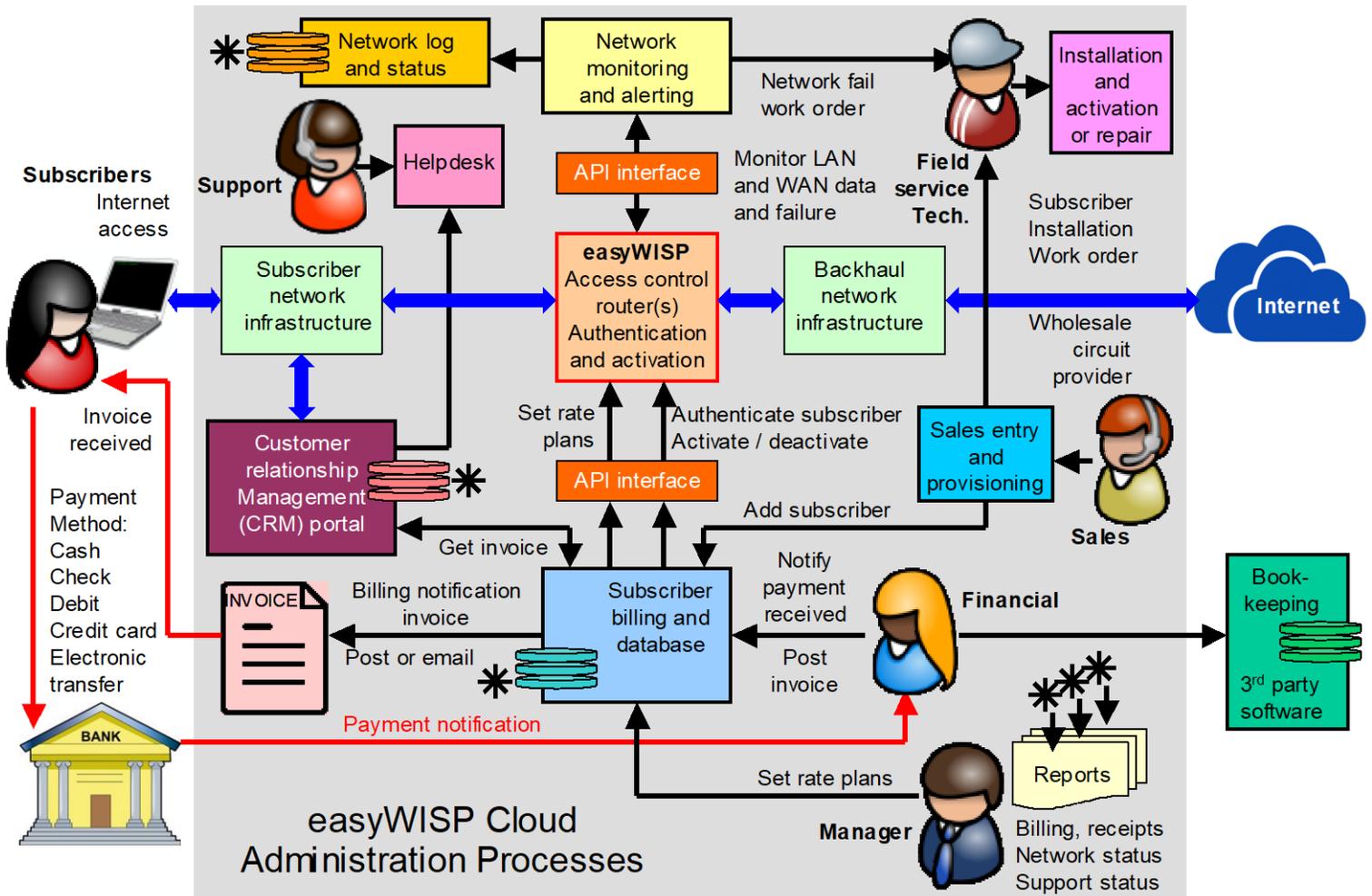
### A world-class WISP management system with no charges

WISP's are accustomed to paying a fee which might be \$1 for each subscriber each month when using a cloud management system. Not with easyWISP, the unlimited EZ-Cloud service is included free with each easyWISP access controller. There is no limit to the number of subscribers and multiple easyWISP access controllers can be added to one easyWISP EZ-Cloud account. This is possible because each easyWISP controller is a computing element in the EZ-Cloud network and processes all access transactions. The EZ-Cloud manages batch tasks, which greatly reduces the operating overhead. Once programmed by the EZ-Cloud, each easyWISP controller manages network access without EZ-Cloud supervision.

### EasyWISP EZ-Cloud overview

The administration process flow is initiated by sales adding a subscriber to the system. The subscriber information is added to the billing database and an installation work order is created and sent to the technician. The subscribers billing cycle is initiated upon activation.

Financial staff issue invoices as indicated by the billing cycle and post notifications of receipts. Each easyWISP access controller is monitored and an alert advises the administrator of a failure. Each subscriber has access to the CRM Portal to check the account and open a support ticket. The manager can obtain reports from each of the sub-systems to monitor the operation of the business.



### EasyWISP EZ-Cloud staff roles

The EZ-Cloud has five roles and each role has unique access privileges. Each role can have an unlimited number of staff login credentials.

**Manager:** responsible for supervision of all roles and business decisions, access to operational reports.

**Sales:** responsible for acquiring new subscribers and adding subscribers to the system.

**Customer service:** responsible for the customer interface regarding any questions, problems, terminations, requests for upgrades, etc.

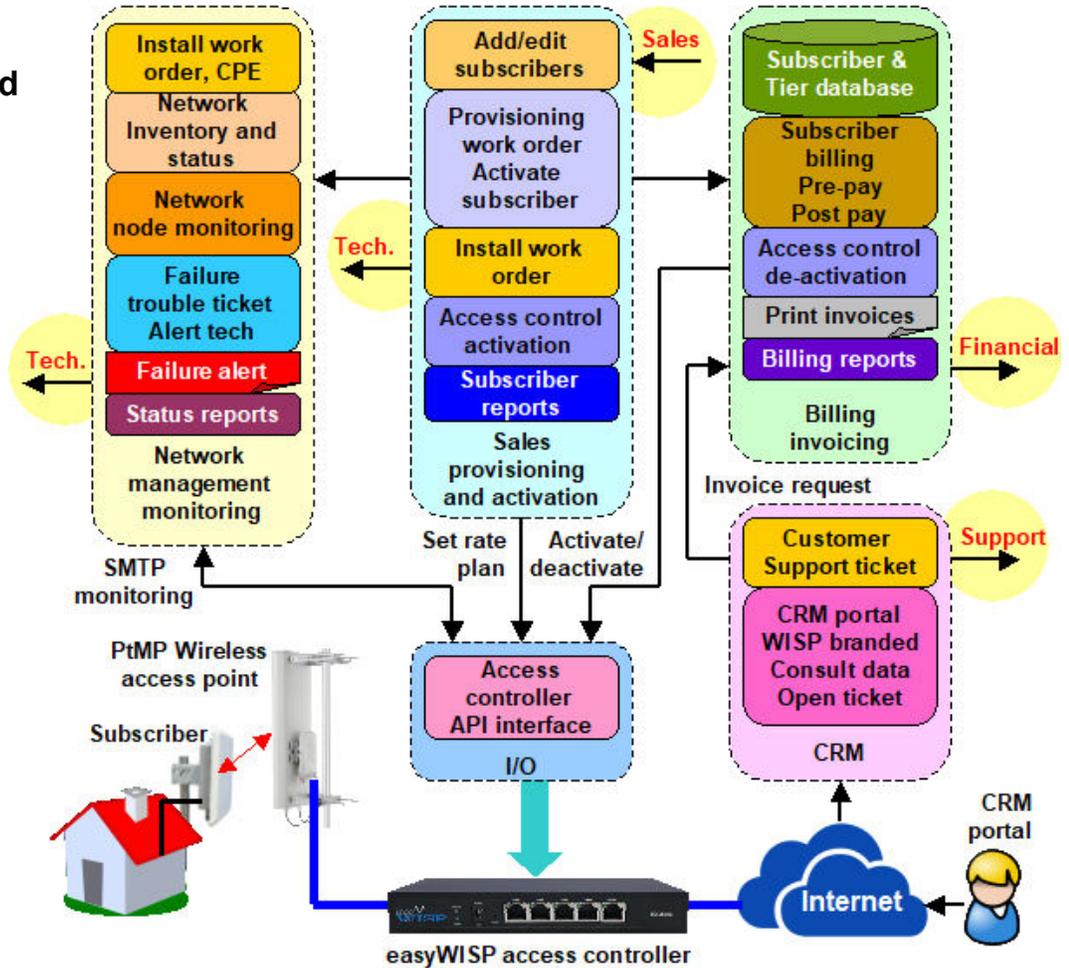
**Finance:** responsible for income and expenses, principle tasks are to maintain the billing system and ensure that subscribers pay invoices.

**Technical:** responsible for work orders, installation of new subscribers, maintenance of existing subscribers, repairs to the network, and expansion of the network.

### EasyWISP: EZ-Cloud sub-systems and sub-system processes.

#### Subscriber billing

The WISP creates a number of rate plans, each is a data speed and corresponding charge. A new subscriber chooses a rate plan that is added to the subscriber's profile. Activation of the subscriber initiates the start of the billing cycle. An invoice is issued for each billing cycle and the subscriber payment is noted in the billing system by the financial staff. The billing system sends the subscriber activation and rate plan instructions to the respective easyWISP access controller. In the case of non-payment the subscriber is deactivated.



#### Sales, provisioning and activation

Sales staff can add new subscribers and change subscriber information. The subscriber chooses a rate-plan. Entry of a new subscriber initiates a workflow process that will generate a work order for technical staff to install the CPE wireless equipment at the subscriber premises. Subscriber billing information is added to the billing database. On completion of the subscriber installation the technician activates the subscriber and initiates the billing cycle.

#### Customer relationship management (CRM)

Each new subscriber receives a login credential for the CRM portal. This is a WISP branded website that the subscriber can login to see information about the account and retrieve billing invoices. The subscriber can open a customer support ticket that is sent to the support staff for answer. On-line payments can be made through the CRM portal. In the case that the Internet is not available due to circuit failure or non-payment then the captive portal displays a message.

#### Network monitoring and reporting

The easyWISP EZ-Cloud monitors all easyWISP controllers for failure and sends an alert to the administrator if this occurs. Support staff can test the circuit to the subscriber CPE wireless when the subscriber reports no connection. Data traffic through each easyWISP controller is monitored and a bandwidth use time graph indicates when a WAN circuit is nearing congestion. The administrator can see a status report for each easyWISP controller.

### Billing rate plans

The WISP can install an unlimited number of rate plans for fixed broadband subscribers. Each rate plan specifies a maximum download / upload speed and the corresponding plan charge. When enrolling a new subscriber the rate plan is chosen based on cost or data speed. Billing invoices charge the customer at the chosen rate plan. The billing system sends the customers chosen data speed to the easyWISP access controller.

### Mobile broadband billing

Mobile broadband provides Internet access for customers who are not subscribers. The billing system issues access codes that have the parameters of duration and data speed. The customer will access an unencrypted WiFi wireless access point using a mobile device. The easyWISP EZ-Cloud manages handoff of customers from one AP to the next to implement roaming. Mobile broadband eliminates the cost of fixed broadband premises installation and a monthly payment obligation.

### EasyWISP access controller functions

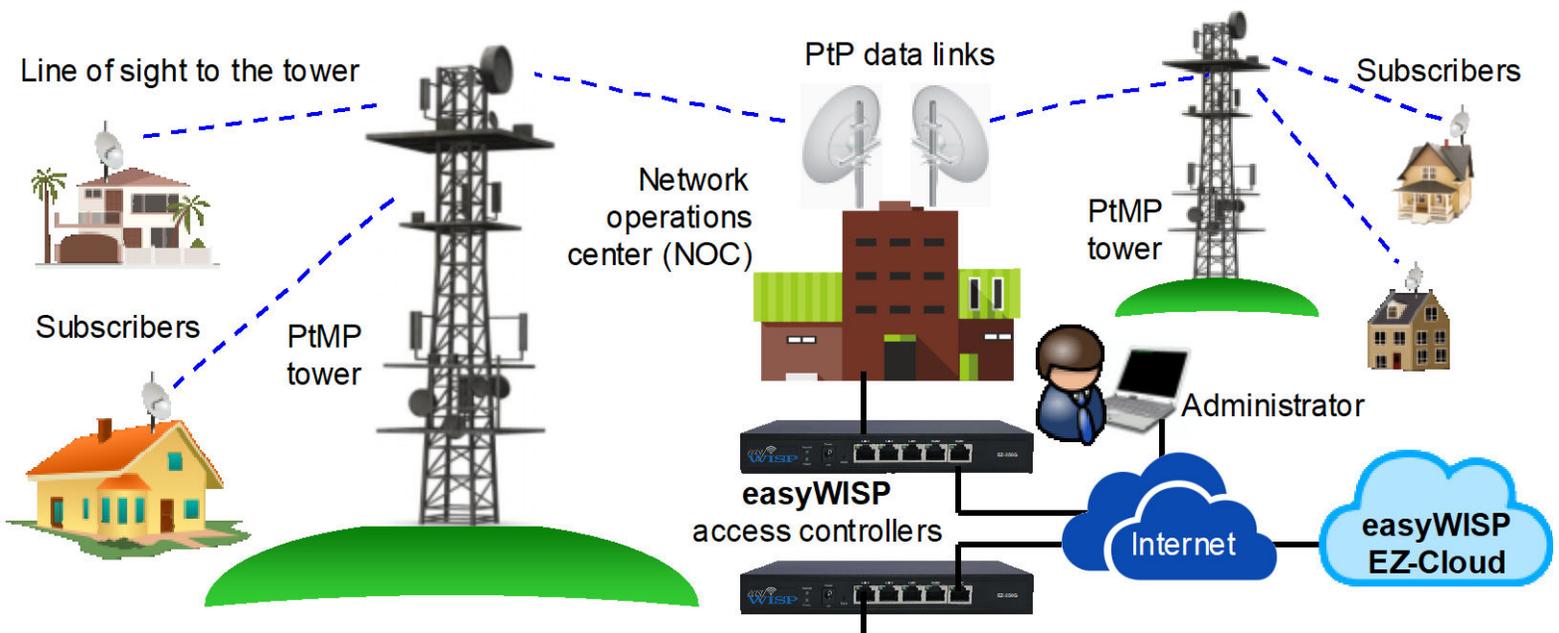
Each easyWISP access controller implements several tasks:

- Authenticate each subscriber CPE onto the network.
- Apply subscriber rate plans.
- Enable/disable subscriber access.
- Monitor CPE status.
- Update the EZ-Cloud with network status and traffic.
- Captive portal for CRM and status.
- Mobile broadband authentication.

### EasyWISP EZ-Cloud network implementation

The easyWISP EZ-Cloud can manage multiple easyWISP controllers. Install an easyWISP controller at the network operations center (NOC) and install additional easyWISP controllers at tower sites that have Internet access, eliminating a point-to-point wireless backhaul from the tower to the NOC.

When a subscriber is added to the billing system the easyWISP controller that will service the subscriber is specified, this might be a NOC or one of the PtMP towers. Each easyWISP controller downloads a partial database for the subscribers assigned to that controller. The easyWISP controller functions autonomously and only receives updates from the EZ-Cloud when a new subscriber is added to that controller.



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