APZU Network Management Features

The network in Neno has grown significantly over the last years. In order to ensure a working system and to maximize the use of the satellite connection, a new approach to management the local network and its connected systems were developed. This document outlines the features grouped by categories of the Network Management System developed by APZU.

### **Connectivity**

* Every user must initially agree to Acceptable Use Policy
* Identify and register connected systems with name of owner, email address, and system identifier (MAC address) through self-registration process
* Easy of 'hookup' to reduce administrative overhead (no upfront registration, no additional software, no custom configuration)

### **Traffic Management**

* Block inappropriate content
* Block access to or restrict access (\*) during business hours to high bandwidth, non-work related sites
* Prevent a single system from taking all the bandwidth (especially for uploads)
* Per system bandwidth limits
* 'Priority lanes' for selected systems (e.g. senior management) and target sites (e.g. email.pih.org) (\*)
* 'Jail' (restricted environment) for non-adherent users
* Optional: Limit numbers of concurrent guest/visitor/unknown systems (\*)
* Optional: Vouchers for time-limited network access
* Optional: Emergency mode to block everything except specific users or specific sites (\*)
* Optional: Restrict network access for private/unknown systems during business hours (\*)

### **Accounting**

* Daily/weekly/monthly reporting on network usage per system (\*)

### **Monitoring**

* Real-time monitoring for troubleshooting
* Active notifications and reporting of downtime for important parts of the network

### **Deployment**

* Run on commodity, low-cost, easy to procure and replace hardware
* Scales up to many access points (30+) with many concurrent users (150+)
* Guarantee availability of core network
* Optional: A blueprint for other sites (e.g. Lisungwi)
* Optional: Integration with dedicated user directories like LDAP or Active Directory (\*)
* Optional: Provide multi-WAN connectivity for (transparent) Internet provider failover (\*)

(\*): Possible, but not yet implemented