Information Sheet – Multi-Site / Utility Function

As the need for electrical power increases, and the provision of supply is reaching capacity, there becomes a need to control the usage, and in some instances reduce consumption to meet demand. This may be within: a large organisation; multiple sites; multi-occupancy sites; or, on a wider scale, through Utility providers.

Some Utilities have already started providing a service, where parts of buildings are re-wired to allow shutdown of everything on that supply, however, this is an expensive mechanism to provide control, and means that changes could be cumbersome to achieve.

The Rayzig System has been designed to provide a centralised mechanism to control multiple sites, with easy configuration which does not require a separate income supply.

Control can be via Raymon (a PC based application), which can login to multiple sites (one at a time), giving the specified level of control (for say building management), where a change can be made, and then link to another site, to carry out a similar or alternate alteration. Access is via WAN / Internet.

For multi-site operations, a site list is stored within a local SQL database (currently Rayzig uses MariaDB or MySQL). For each site, user access is at a designated level, **Engineer (E), Administrator (A) or User (U)** which is set on each specific site. Operational changes can then be made according to the level of authorisation.

Within the Utility login, for each site, a load list can be created, defining the zone being controlled, the duration of any outage and the delay before start-up. Additionally, a number of shutdown groups can be defined so that a group, rather than specific loads, can be controlled.

To achieve Load Management, it is necessary to ensure that each output module within the target system is assigned to a zone in the 800-999 range. (users may define up to 6 zones for each output module). This is undertaken with the client agreeing to the service.

The module can then be controlled by the load management list, or through an API, which will specify the length of shutdown and the restart delay – (this ensures that not all modules are coming on line together after a shutdown and causing an overload situation).

The Utility login provides the ability to send messages to specified sites to carry out an agreed shutdown operation for a specified period of time. This is achieved by selecting the loads, sites or shutdown group from Raymon's Load Management list and issuing a 'Zone Off' command.

		load name	kw	zone	mins off	delay sec.	A	B	C	D	notes
RZ00001	PW1809344	Rayzig main subnet gateway on channel 16 192.168.1.143:3143									
VA		Office lighting on 6010 and 0057	1	807	1	0	8	0	0	0	Central 1-10v fluorescent on port 4
VA		Dali demo on 6016	1	808	1	0	8	0	0	0	Four DALI controled spot lamps
VA		Four sets of DALI fluorescents on 6012	0	809	1	0	8	0	0	0	Make my office look like tanning studio
RZ00013	PW1457225555	Coxtalot shopping aracade coxtalot.org.uk:3366									
RZ00067	PW177653	Frosty Food sprocessing plant power.frostyfood.com:2333									
VA		Refridgeration 5 and 6	3	814	120	13	16	0	1	0	
VA		Refridgeration units 2,3 and 4	2	800	120	11	16	0	0	0	Intermitted load - 2.3kW max
RZ00001	PW343434	Rayzig subnet A gateway on channel 24 192.168.1.140:3140									
VA		Test relay output module 7A02	0	817	3	0	6	0	0	0	Demo only - has no loads
RZ00001	PW897897	Rayzig subnet D gateway on channel 12 192.168.1.142:3142									
VA		test realy output module 7D02	0	800	2	0	6	0	0	0	
RZ00034	PW33445	Crunchy Crisp Ltd www.crunchy-crisps.co.uk:3344									
VA		Main crisp cruncher	8	800	240	8	21	0	0	0	7kw - crunches a lot of crisps
VA		Waste disposal unit	10	814	120	5	21	0	0	0	
RZ00002	IoM0001	Rayzig-emc Test Rig 192.168.1.130:3377									
VA		Environmental Chamber	3	809	120	30	10	0	0	0	Operational Chamber

For the benefit of load management, a load can be defined in groups. Up to four Groups (0-999) can be specified (under group A – D), which can be used to provide a quick mechanism to instigate a shut-down on a specified group, which would allow a particular 'load' profile can be achieved. (Users still have the ability to manually turn the defined modules back on, prior to the defined restart).

The use of Rayweb as an Engineering Status user will allow a list of Sites with / without loads to be shown and printed.

A log file shows whether connection has been made to a particular site, and utility load monitoring would be able to show whether the required levels have been reached. In the event of needing to reduce further a new group, site or load command can be issued to achieve the level of control.

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