

#### Operational\_description

- The DCON is short for DATA CONCENTRATOR and it basically polls the REMOTE DATA SENSORS (RDCs) with a predetermined packet over-the-air (@ 2.4Ghz) periodically. Upon the reception of the poll packet, the RDCs respond with their own packet.
- DCON collects, maintains and sends the collected data from various RDCs: it sends the collected data out through an ethernet link. The "listening" entity (most likely a PC) in the network has to identify itself before it can establish a connection with the DCON, and be able to receive the packets from it. This connection establishment is done by an initial "handshake" between the DCON and the PC. Once the connection is established the DCON will send collected information from the RDCs to the PC.
- Each RDC contains a sensor to collect information from its surrounding environment. It stores this information as events. For an event to occur (from RDCs point of view) the change in the collected sensor data has to go beyond a certain threshold. For example, if a RDC's threshold value is set at 5C, a change of 3C in the environment will not generate an event. RDCs reply to DCON's wireless poll with the collected events over-the-air.
- Overall, there are 2 "data links" in the system: one being the link between the RDCs and the DCON, which is a wireless link at 2.4Ghz, the other being the ethernet link between the DCON and the PC. PC has to initiate the system at startup, and DCON is in charge of the communication and data collection process for the whole system. DCON should be able to detect any connection loss between itself and the RDCs and report it to the PC so that the user is aware of it.