

## ***ABSTRACT***

*Muhammadiyah Sumberrejo Islamic Hospital (RSIM Sumberrejo) is a private hospital institution owned by an Islamic organization in Bojonegoro. In RSIM Sumberrejo apply information technology (IT) to perform its administrative activities for data processing and existing activities at this hospital run more effectively and efficiently. RSIM Sumberrejo already has a server space that is useful as a data center for as a container of IT management.*

*From result of research known that condition of data center at RSIM Sumberrejo not fulfill TIA-942 standard. While based on the future plan, the data center will be developed. One of them developed is the arrangement of air conditioners that meet the TIA-942 standard with the appropriate temperature. Therefore, it is necessary to design temperature monitoring system to know the temperature condition needed by the data center. RSIM Sumberrejo data center design using TIA-942 standard and PPDIOO Network Life-Cycle Approach method in the first three stages of Prepare, Plan, Design. The use of these methods fits well with RSIM Sumberrejo's data center development as it has an Optimize phase advantage, which can be used for long-term development.*

*The final result of this research is the design of data center building facilities RSIM Sumberrejo which in accordance with TIA-942 standard, especially in terms of arrangement of air conditioner. It is known that the optimum temperature condition of the data center room according to TIA-942 standard is 18°C with the use of temperature monitoring system to monitor the temperature to remain stable. Development of data center in Tier 2 mechanical Tiering section must have backup on cooling device and power. The HVAC cooling device requires a capacity of 39,634.97 BTU / h. Then the power of the UPS sustains total power usage on all server racks and the HVAC system of 15300 watts requires a voltage of 40 kVA.*

*Keywords: data center, temperature, TIA-942 standard, PPDIOO life-cycle approach, cooling, power.*