

## **Abstract**

# **A Comparative analysis to Data Center design standards**

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Today's the amount of data and the information that produce in virtual environment is significant and massive, these data often could be very important and can have strategic value. Nowtimes it is obvious that this information should be well kept and organized, and should store safe and be ready and easy to use. As the data, storing is progressing on digital devices such as tapes and storages and these devices often have a limited useful-life so it should be a standard procedure for keeping and storing and taking care of these data. Therefore, the field experts have some standards for well using and safe keeping these data and devices, so they could achieve to longer efficiency and stability. These standards called "Data Center designing standards". These standards implemented in specific places called "Data Center" [1]. In other hand, the connectivity between two locations and being able to transfer data from one to another place is an important subject that covered in data center designing standards too.

So considering the above challenges experts when designing data center's infrastructures have to follow some rule and standards. It is obvious that the first step for making a good data center is to make good physical and geographical conditions for it [2]. Data center is a place that contains all the digital devices and cabling and cooling and security and other stuffs, all in one place. So not only these devices are important because they have data.

Before 2010, the only well-known and popular standard was ANSI/TIA-945-2005. This standard's main discuss was about infrastructure and cabling and these stuff, of course it had some subjects in other aspects of building a good data center such as cooling and geographical conditions and security and etc, but it was so brief and incomplete and unfocused [3]. These incompleteness and briefness in TIA-945 sometimes make it hard to tell it is a standardized document! In addition, TIA-945 is talking about Fault tolerance but not so good in this subject too [4]. Therefore, in 2011 a new standard come along called BICSI. We tried to talk about these two standards and compare them from different perspectives [5].

**Key words:** TIA-942/ANSI BICSI, Cooling, Green data centers, Fault-Tolerance