



CTC(T&IT), CRPF



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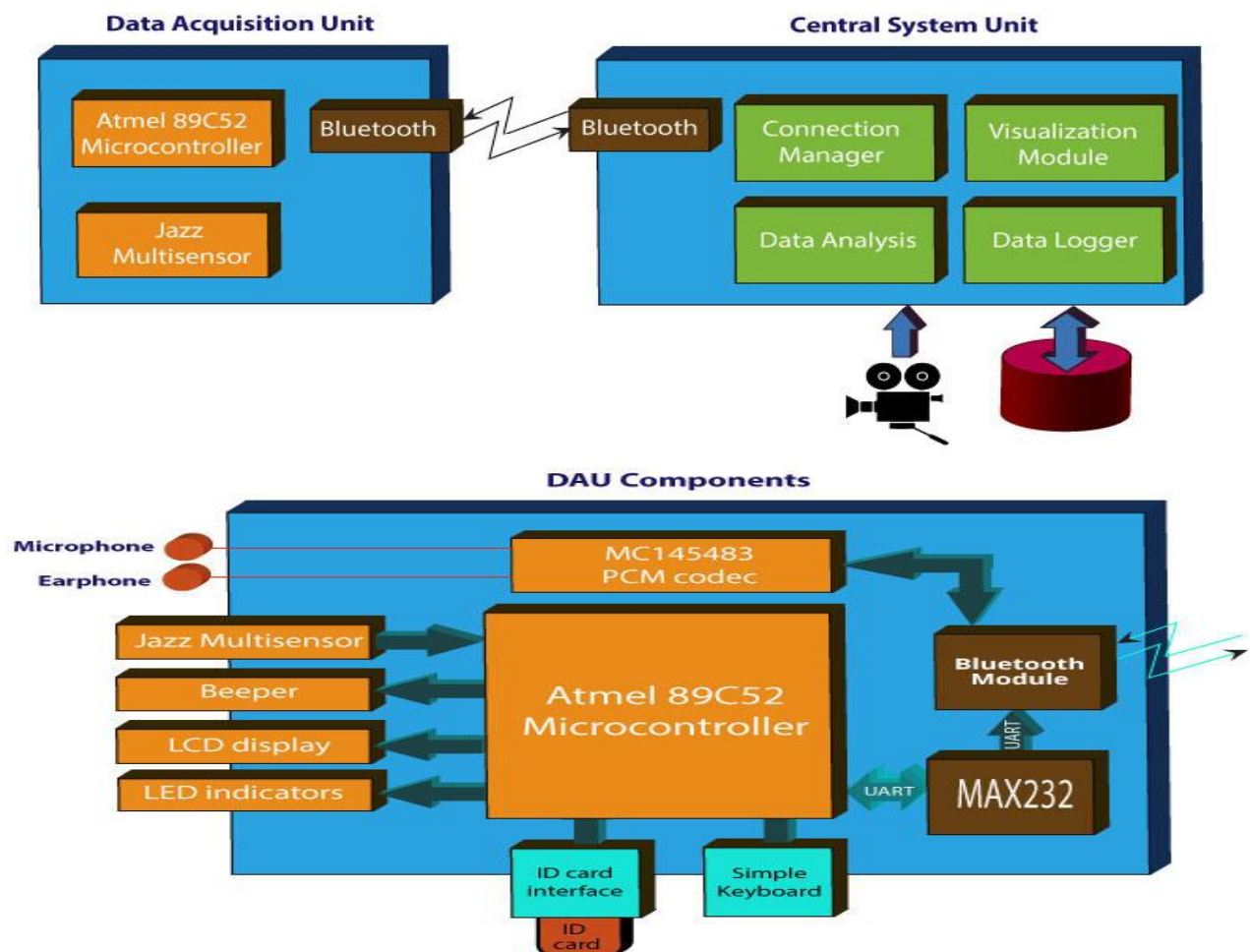
“You must be the change you wish to see in the world.”

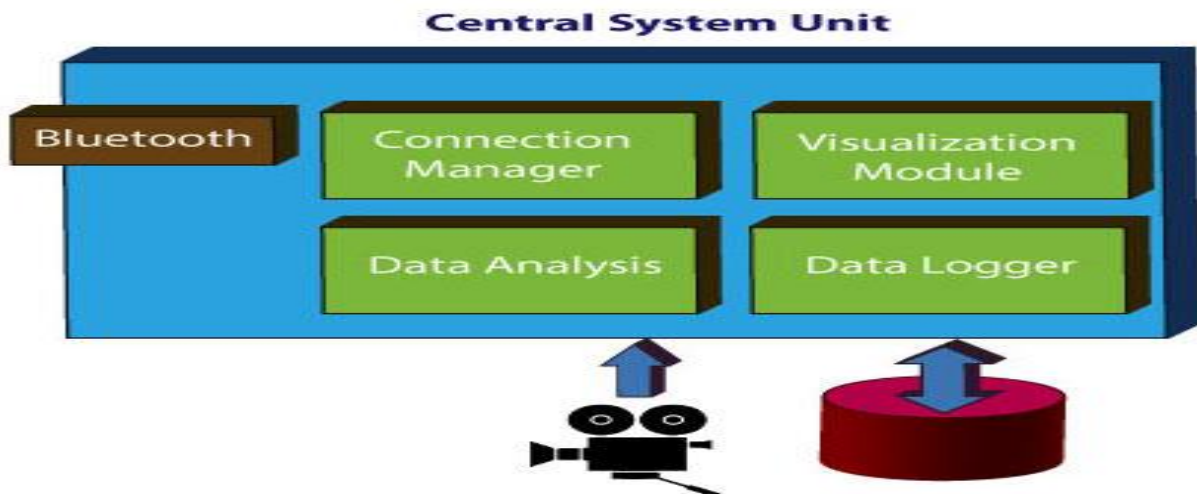
BLUE EYES TECHNOLOGY

The main objective of Blue eyes technology is to develop a computational machine having sensory and perceptual ability like those of humans. The Blue Eyes technology system is a combination of a set of hardware and software systems.

Blue eyes technology consists of:-

1. Mobile measuring device or Data Acquisition Unit (DAU)
2. Central System Unit (CSU)
3. The Hardware





The steps involved for designing such type of computers are given below.

1. Process of giving sensing capacity.
2. Human Emotion detection or Affect Detection.
3. Respond appropriately and properly

Artificial Intelligent Speech Recognition used in Blue Eyes Technology :

For implementing the Artificial Intelligent Speech Recognition system in Blue Eyes technology, the working environment should be very important. The manner of the user's speech, grammar, noise type, noise level and the position of the microphone are some important factors that may influence the features of speech recognition system. In Artificial Intelligent Speech Recognition system, an automatic call handling method is implemented without any telephone operator.

Two basic ideas are included in the Artificial intelligence (AI),

- Study the thought of human beings.
- Represents the thought process of human beings through robots, computers etc.

Actually, Artificial intelligence (AI) denotes the behaviour of a computer or any machines but it is carried out by the humans is called as 'intelligent'. This AI makes machines more power full, useful, and smarter and also it is less expensive compared to natural intelligence. Natural language processing (NLP) makes artificial intelligence systems to communicate English. The main goal of

the Natural language processing (NLP) is to understand the users input and react according to these inputs. The input data or words are continuously scanned and finds matches against inside stored known data or words. And after identifying the key words, the corresponding actions are carried out by the machine. In this way the Blue Eyes technology enables the users to communicate with the machines with their own languages.

Conclusion:

BLUE EYES technological approach assures a convenient technique, that simplifies the life by supporting more elegant and user friendly provision in computing devices. The day is very near, that this Blue Eyes technology will advance its way towards your house hold devices and makes you lazier. In future, even this Blue Eyes will reach as your hand-held mobile device.

COMPUTER VISION

In computer terms, “vision” involves systems that are able to identify items, places, objects or people from visual images – those collected by a camera or sensor. It's this technology that allows your smartphone camera to recognize which part of the image it's capturing is a face, and powers technology such as Google Image Search.

As we move through 2020, we're going to see computer vision equipped tools and technology rolled out for an ever-increasing number of uses. It's fundamental to the way autonomous cars will “see” and navigate their way around danger. Production lines will employ computer vision cameras to watch for defective products or equipment failures, and security cameras will be able to alert us to anything out of the ordinary, without requiring 24/7 monitoring.

Computer vision is also enabling face recognition, which we will hear a lot about in 2020. We have already seen how useful the technology is in controlling access to our smart phones in the case of Apple's Face ID and how Dubai airport uses it to provide a smoother customer journey. However, as the use cases will grow in 2020, we will also have more debates about limiting the use

of this technology because of its potential to erode privacy and enable 'Big Brother'-like state control.

Extended Reality

Extended Reality (XR) is a catch-all term that covers several new and emerging technologies being used to create more immersive digital experiences. More specifically, it refers to virtual, augmented, and mixed reality. Virtual reality (VR) provides a fully digitally immersive experience where you enter a computer-generated world using headsets that blend out the real world. Augmented reality (AR) overlays digital objects onto the real world via smartphone screens or displays (think Snapchat filters). Mixed reality (MR) is an extension of AR, that means users can interact with digital objects placed in the real world (think playing a holographic piano that you have placed into your room via an AR headset).

These technologies have been around for a few years now but have largely been confined to the world of entertainment – with Oculus Rift and Vive headsets providing the current state-of-the-art in videogames, and smartphone features such as camera filters and Pokemon Go-style games providing the most visible examples of AR.

From 2020 expect all of that to change, as businesses get to grips with the wealth of exciting possibilities offered by both current forms of XR. Virtual and augmented reality will become increasingly prevalent for training and simulation, as well as offering new ways to interact with customers.

Virtual Reality

What is Virtual Reality?

Virtual Reality (VR) is the use of computer technology to create a simulated environment. Unlike traditional user interfaces, VR places the user inside an experience. Instead of viewing a screen in front of them, users are immersed and able to interact with 3D worlds. By simulating as many senses as possible, such as vision, hearing, touch, even smell, the computer is transformed into a gatekeeper to this artificial world. The only limits to near-real VR experiences are the availability of content and cheap computing power.

What's the difference Between Virtual Reality and Augmented Reality?

Virtual Reality and Augmented Reality are two sides of the same coin. You could think of Augmented Reality as VR with one foot in the real world: Augmented Reality simulates artificial objects in the real environment; Virtual Reality creates an artificial environment to inhabit.

In Augmented Reality, the computer uses sensors and algorithms to determine the position and orientation of a camera. AR technology then renders the 3D graphics as they would appear from the viewpoint of the camera, superimposing the computer-generated images over a user's view of the real world.

In Virtual Reality, the computer uses similar sensors and math. However, rather than locating a real camera within a physical environment, the position of the user's eyes are located within the simulated environment. If the user's head turns, the graphics react accordingly. Rather than compositing virtual objects and a real scene, VR technology creates a convincing, interactive world for the user.

Virtual Reality technology

Virtual Reality's most immediately-recognizable component is the head-mounted display (HMD). Human beings are visual creatures, and display technology is often the single biggest difference between immersive Virtual Reality systems and traditional user interfaces. For instance, CAVE automatic virtual environments actively display virtual content onto room-sized screens. While they are fun for people in universities and big labs, consumer and industrial wearables are the wild west.

With a multiplicity of emerging hardware and software options, the future of wearables is unfolding but yet unknown. Concepts such as the HTC Vive Pro Eye, Oculus Quest and Play station VR are leading the way, but there are also players like Google, Apple, Samsung, Lenovo and others who may surprise the industry with new levels of immersion and usability. Whomever comes out ahead, the simplicity of buying a helmet-sized device that can work in a living-room, office, or factory floor has made HMDs center stage when it comes to Virtual Reality technologies.

Virtual Reality and the importance of audio

Convincing Virtual Reality applications require more than just graphics. Both hearing and vision are central to a person's sense of space. In fact, human beings react more quickly to audio cues than to visual cues. In order to create truly immersive Virtual Reality experiences, accurate environmental sounds and spatial characteristics are a must. These lend a powerful sense of presence to a virtual world. To experience the binaural audio details that go into a Virtual Reality experience, put on some headphones and tinker with this audio infographic published by The Verge.

SERVER CLUSTER

A cluster as the term implies has two or more computers working at the same time. Each computer involved in a cluster is called a node and has its own properties like hard drives, RAMs, CPUs etc. Though each server cluster has its own resources, it is displayed in the network under one host name and has only a single IP (Internet Protocol) address.

In order to provide high-quality services for clients, a group of servers run together to form a server cluster. The advantage of a working in a server cluster is that, if one computer in the cluster fails, the work can be switched to a different computer in a cluster. The server clusters assure that clients have round the clock access to all the relevant server related resources.

Importance of a server cluster

A server cluster is proven to be more reliable, scalable and effective than using a single computer. Server clusters are made mainly for the application that updates its data regularly and for those applications that run in a memory state for a long time. Generally, server clusters are used for servers including files, prints, databases, and messages. A server cluster is capable of dealing with failures like:

- Application software failures and its related service failures.
- Failures in hardware systems like CPU's, memory, power supplies, etc.
- Website failures caused by natural setbacks, power disruptions, etc.

The main advantages of setting up a server cluster in an organization are :

1. Availability
2. Reliability
3. Scalability

Server clusters cater to availability by providing various applications and services to clients in order to meet the uptime goals of their organization. A server cluster can provide reliability by contributing fault tolerance in case of a failure in the system by getting rid of the particular point of failure through redundancy. Scalability is the ability of a network for future growth.



How does server cluster work?

Server clusters work well for applications that cannot be allocated among multiple servers. Each server included in a server cluster is said to own and control its local devices. Each server also maintains a copy of the particular operating system, its applications, and services that are engineered by the cluster. Every cluster has common devices like disks that are in the common disk supply. A connection media that can provide access to these discs, etc. are also possessed and controlled by one server at a time.

In a server cluster, only one node will be operating at a time. The reason is that each node receives its updates separately. The other nodes are usually kept in a stand-by mode. If any active node happens to fail, the other stand by nodes will take over immediately. This process is possible because all nodes in a cluster are attached to a shared storage system. This shared storage system used by the server clusters is called a quorum. It is said to be the data base configuration of the server cluster. The quorum resource usually contains data like information on cluster configuration, and it keeps a record of the current changes done to that configuration.

Types of server clusters

There are three kinds of server clusters. They are:

1. **Single quorum device cluster** – Single quorum device cluster is also known by the name Standard quorum cluster and is the most commonly used type of cluster. It has multiple nodes with either one or more cluster storage (cluster disk arrays) and has a connection mechanism called “a bus”.
2. **Majority node set cluster** – In this type of cluster, each node manages its own copy of the data configured in the cluster. It is the quorum resource that helps keep the configuration data persistent among the nodes. And hence the majority node set clusters are widely preferred for the use of geographically dispersed server clusters.
3. **Local quorum cluster** – is also known as a single node cluster. As the name suggests, it has only one node and is used widely for the purpose of testing.

Many organizations these days are choosing server clustering as a medium of increasing their server's uptime. Server clusters are constructed in such a way that the servers included in the cluster can function together. This helps in protecting data, and other applications and its services running even if a server fails to work on one computer. However, server clusters have to depend on IP based network technologies to function.

ROBOTIC PROCESS AUTOMATION (RPA)

Robotic Process Automation is the technology that allows anyone today to configure computer software, or a “robot” to emulate and integrate the actions of a human interacting within digital systems to execute a business process. RPA robots utilize the user interface to capture data and manipulate applications just like humans do. They interpret, trigger responses and communicate with other systems in order to perform on a vast variety of repetitive tasks. Only substantially better: an RPA software robot never sleeps and makes zero mistakes.

How is RPA different from other enterprise automation tools?

In contrast to other, traditional IT solutions, RPA allows organizations to automate at a fraction of the cost and time previously encountered. RPA is also non-intrusive in nature and leverages the existing infrastructure without causing disruption to underlying systems, which would be difficult and costly to replace. With RPA, cost efficiency and compliance are no longer an operating cost but a by product of the automation.

How does Robotic Process Automation work?

RPA robots are capable of mimicking many—if not all—human user actions. They log into applications, move files and folders, copy and paste data, fill in forms, extract structured and semi-structured data from documents, scrape browsers, and more.

Essentially any high-volume, business-rules-driven, repeatable process qualifies for automation.

An HR service provider from Europe was processing 2,500 sick leave certificates per month with an average handling time of four minutes per item. Within three weeks they implemented an RPA solution and achieved 90% process automation. The RPA robot extracts data from a transaction in SAP, inserts the information into the customer’s systems, and prints it. The HR service provider achieved a return-on-investment within six months, with error rates reduced to 0%, manual effort reduced to 5%, and processing time reduced by 80%.

Reduce effort in the back office

A global retailer was using its store closing reports to validate closing information for each of its registers across hundreds of stores. The store's employees used a manual and sluggish process to pull up these reports. By automating the process, the store freed up its employees to now focus on more customer-centric activities. The RPA robots now move the closing reports to one server, then read and consolidate the needed information for the store's closing reports.

Improve customer service in the front office

A trade credit insurance company with over 50,000 clients worldwide automated the credit limit request underwriting process. Underwriters were previously gathering information manually, from internal (Risk & Policy) to external (Customer Site, Google News) sources. With RPA, they saved 2,440 hours of human work a month. Employees now use that time to work directly with customers.

What are the business benefits of RPA?

Robots are here to stay. The faster you harvest their potential, the faster you create a competitive edge for your business. Robotic Process Automation delivers direct profitability while improving accuracy across organizations and industries. Enabling RPA to handle any processes will not only transform and streamline your organization's workflow. It will allow for superior scalability and flexibility within the enterprise, doubled by fast, tailored response to specific needs. Software robots are easy to train and they integrate seamlessly into any system. Multiply them, and instantly deploy more as you go. They constantly report on their progress so you can go even bigger and better by using operational and business predictability, while improving strategically.

Quiz

1. Frequency range of HF Radio communication
 - a. 1-30 Mhz
 - b. 3-30 Mhz
 - c. 3- 300 Mhz
 - d. none
2. DDS stand for
 - a. Direct digital synthesizer
 - b. direct dual synthesizer
 - c. direct detector synthesizer
 - d. none
3. Gate used in DIAC
 - a.1
 - b. 2
 - c .4
 - d. none
4. Over modulation result in
 - a. weakling of the sig
 - b. excessive carrier power
 - c. distortion
 - d. None of above
5. In Transmitter mainly oscillator used
 - a. Hartley
 - b, RC phase shift
 - c. Wien bridge
 - d. crystal

6. The characteristic impedance of transmission line depends upon
 - a. shape of conductor
 - b. surface treatment of the conductor
 - c. conductivity of material
 - d. geometrical configuration of the conductor
7. As the modulation level is increased the carrier power
 - a. is increased
 - b. remains the same
 - c. is decreased
 - d. None of above
8. In radio transmission the medium of transmission is
 - a. space
 - b. antenna
 - c. cable
 - d. None of above
9. A high Q tuned circuit will permit and amplifier to have high
 - a. Fidelity
 - b. Frequency range
 - c. sensitivity
 - d. Selectivity
10. The heart of synthesizer circuit is
 - a. Mixer
 - b. driver
 - c. RF frequency
 - d. PLL

Tech Terms: Social Media

1. CONTENT CURATION

Even if you're new to tech, chances are you're not new to social media. Content curation is the process social media sites use to gather and present content (articles, links, videos, images, etc.) that are relevant to a specific topic or a user's area of interest. Content can be selected manually by a person designated as a curator, or it can be gathered through automated programs that track things like upvoting, likes, hashtags, or analysis of a user's previous online activity.

2. ENGAGEMENT

Engagement is the term used for likes, shares, comments, and other interactions with a business' social media presence. It's one metric companies use to measure and evaluate their social media performance. Liking posts on Facebook, tweeting on Twitter, and viewing pins on Pinterest are all examples of social media engagement.

3. EMBEDDING

Embedding is the process of putting social media content on a web page. When you see a YouTube video on a blog you're reading, or a tweet posted on a business' website you're checking out, that's an example of embedding. Embedding is done through HTML code, and most social media sites have an "Embed" option that gives you the exact code you'll need.

4. IMPRESSIONS

Impressions are the number of times an online ad, article, video, or other piece of content has been "fetched" (or requested) from its source. Whenever social media content shows up in your web browser, it's been fetched from its web server, and you've just helped make an impression.

5. INFLUENCER

Influencers are individuals with a presence on social media who use their platform to affect group opinions and behavior. Celebrities who use Twitter, YouTubers with legions of subscribers, and activists organizing on Facebook are all examples of social media influencers.

6. MENTIONS

Mentions are ways of referring to a person or account on social media platforms (@yourTwitterhandle on Twitter or +YourName on Google+). Mentions are another metric companies can use to measure their social media footprint.

7. MICROBLOGGING

Microblogs are a subset of traditional blogs where instead of longform content, short messages consisting of a few sentences, an image, a video, or a link are posted and shared. Twitter, Google+, Tumblr, and Facebook are all considered microblogging platforms.

8. ORGANIC

Organic content describes social media content that ranks highly because individual users have liked, reposted, or viewed it—not because companies have paid to promote the content. Articles, memes, and videos that go viral through online community sharing (as opposed to paid advertising) are considered organic.

9. REACH

Reach is a measure of your potential social media audience size—it's the number of people who have access to your content, though reach doesn't measure whether or not the content was actually viewed.

10. SOCIAL GRAPH

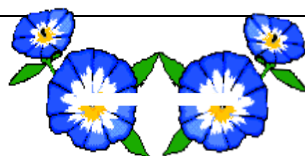
Social graph is a model of Internet users on a social network and how each one is related to all the others. It's the way sites like Facebook suggest other users you might know, or how online games like Words With Friends connect you with your cousin who you didn't even know had a social media account.

11. USER-GENERATED CONTENT (UGC)

User generated is social media content (posts, photos, videos) created by users about a brand or product and not by companies or organizations themselves. When a local restaurant retweets a Twitter user's positive shout out, or Coca-Cola reposts a picture of an Instagram user drinking a Coke, that's UGC.

Acknowledgement

We are highly thankful for reading out this compilation and hope it will be useful for you in our day to day professional and personal life. We would like to hear your interest areas, suggestions from you to make this newsletter more informative and interesting. Your views will definitely help us to create this newsletter as an effective medium to reach you with latest development in the fields of communication and technology.



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Answers to the Quiz

1	2	3	4	5	6	7	8	9	10
B	A	B	C	D	D	B	A	D	D