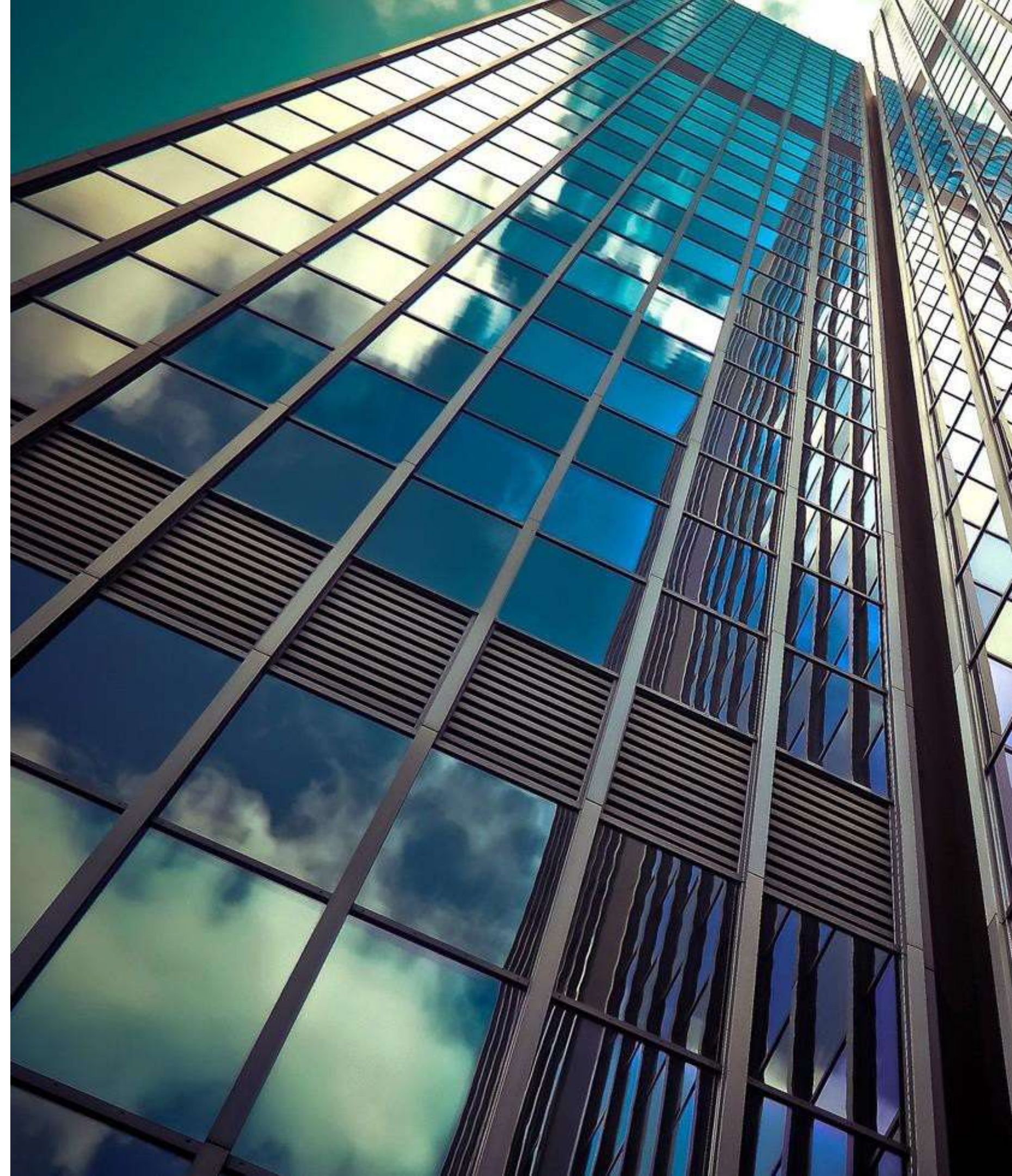


# A Presentation on **IETM Level - IV**

Registered With :







**IETM Development is Our Passion not Just Business**



# About Us

- ❖ Code and Pixels Interactive Technologies Private Limited is a IT company with its headquarters in Hyderabad, providing **IETM services** to industries in verticals such as **Defence, Transportation, Aerospace, Manufacturing, Energy**

**Leader in IETM Technology**

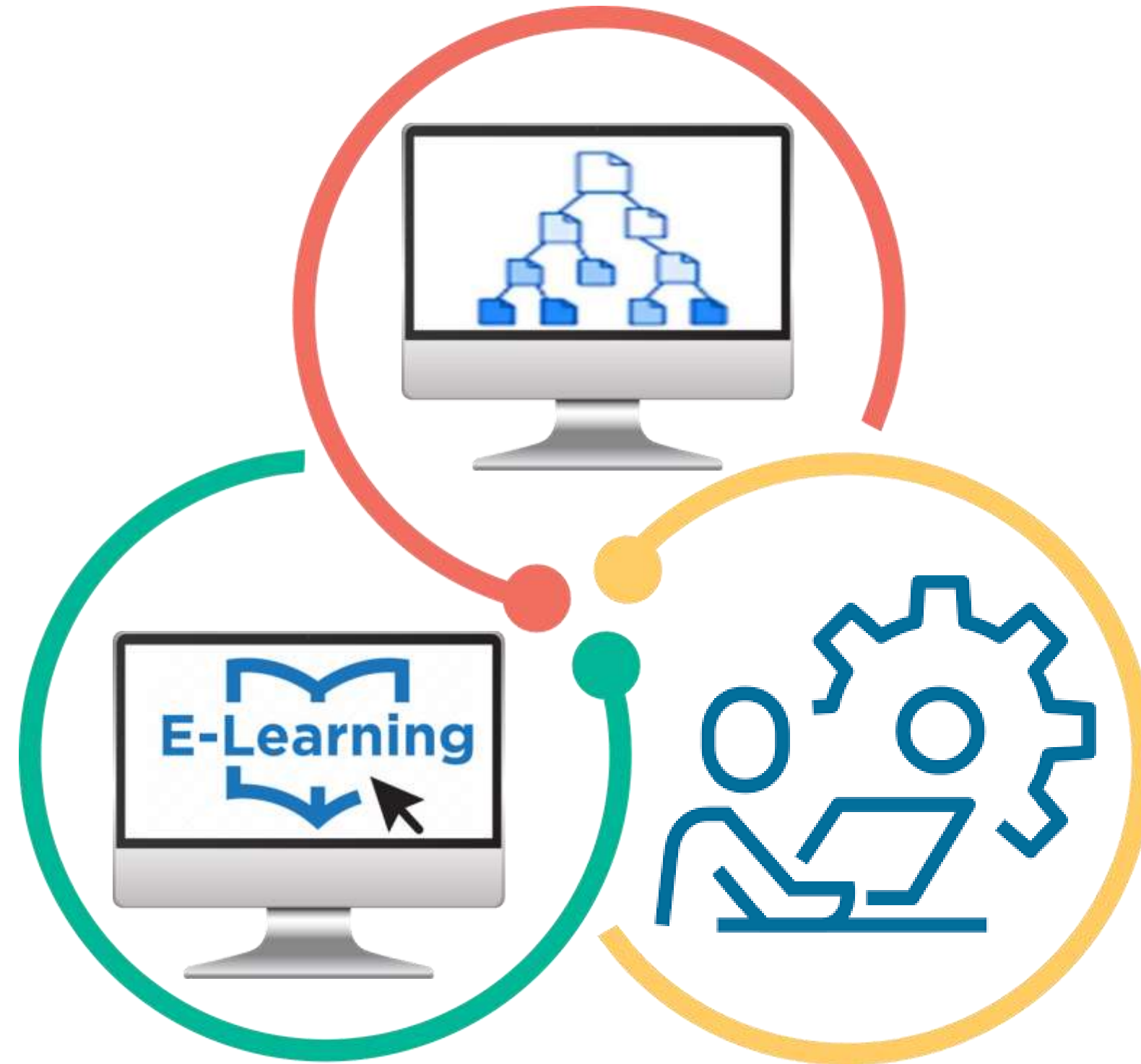




# Services

IETM – JSG 0852 Indian Defence Standard

E-Learning  
CBT | Video Film



Technical Documentation

JSS 0251



- ❖ 125+ Customers across a broad spectrum of industries and sectors
- ❖ Excellent track record of Delivery
- ❖ Experienced Team
- ❖ Delivered 75+ IETM projects and 5000 Hours of e-Learning content /CBT



## Operations

- ❖ 50+ professionals in development team
- ❖ Well equipped Development centre in Hyderabad
- ❖ ISO 9001:2015 Quality Certified

## Performance





# Our Team

*We have 50+ Members Professional Team Consists of :*

IETM Programmers

Project Managers

IETM - UI & UX

Content Writers

Document Integrator

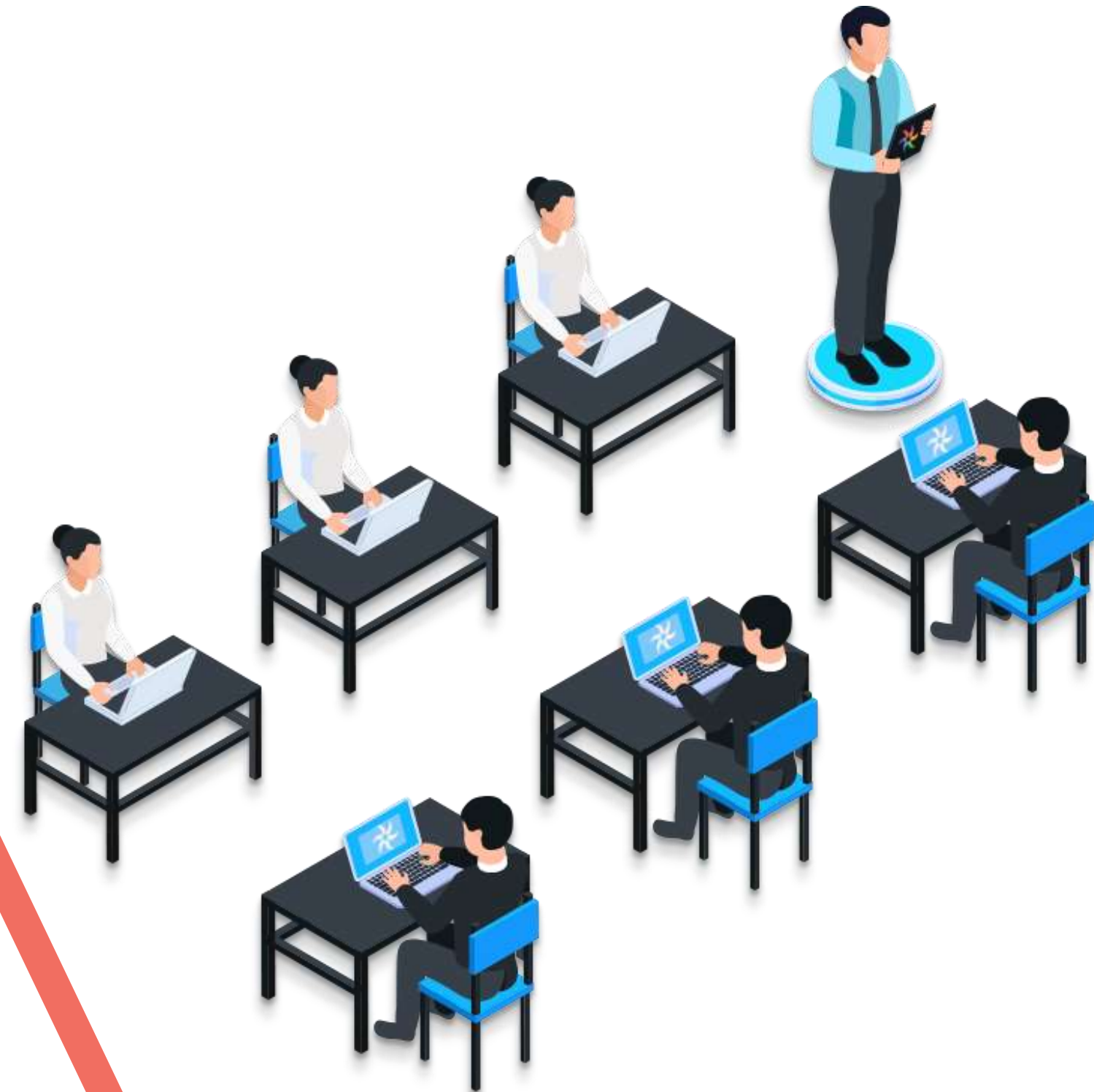
Instructional Designers

QA & QC

Multimedia Team

HTML/PHP Developer

Sales & Marketing  
Team





Code and Pixels has provided a range of Computer-Based Training (CBT), Interactive Electronic Technical Manuals (IETMs), technical documentation, and training aids for numerous defence laboratories such as DRDO, DRDL, RCI, and ASL, as well as production agencies like Bharat Dynamics Limited (BDL), Electronics Corporation of India Limited (ECIL), Bharat Electronics Limited (BEL), Hindustan Shipyard Limited (HSL), and BrahMos Aerospace.

The company also collaborates with various OEMs, including TATA, L&T, NOVA, Tractors India Limited, IdeaForge, Kirloskar, Enertech, Marine Electricals, MAN Energy Solutions, Tata NOVA, Tata Advanced Systems Limited, Anath Technologies, Raphe mPhibr, Jyoti Limited, Allterra, FlaktGroup, Johnson Controls, Gen Technologies, Rifle Factory Ishapore, Avison Systems, Data Patterns, Zmotion Autonomous Systems Pvt Ltd, Electropneumatics & Hydraulics (India) Pvt. Ltd., Kirloskar Brothers Ltd / KSB Ltd, Asteria Aerospace Limited, among others.





We are also partnered with international defence IETM service providers, including "Navcon Advanced Systems," a leading aerospace and defence company based in the UAE, and "EKA Three G," which offers an advanced networked electronic IT-based system from the Republic of Korea.

We are honoured to support the Indian defence sector and have contributed to significant projects such as the AKASH Missiles, Agni Missiles, BrahMos Missile, ASTRA, and MRASM for the Indian Air Force (IAF).

Code and Pixels brings 12 years of experience managing defence projects, with a team well-versed in all Indian defence standards, including JSG 0852: 2019, JSS 0251: 2015, and the European aviation standard S1000D.

We are the only company in India that has successfully delivered approximately 75 IETM assignments to the Indian Armed Forces.







## Company Owned Building



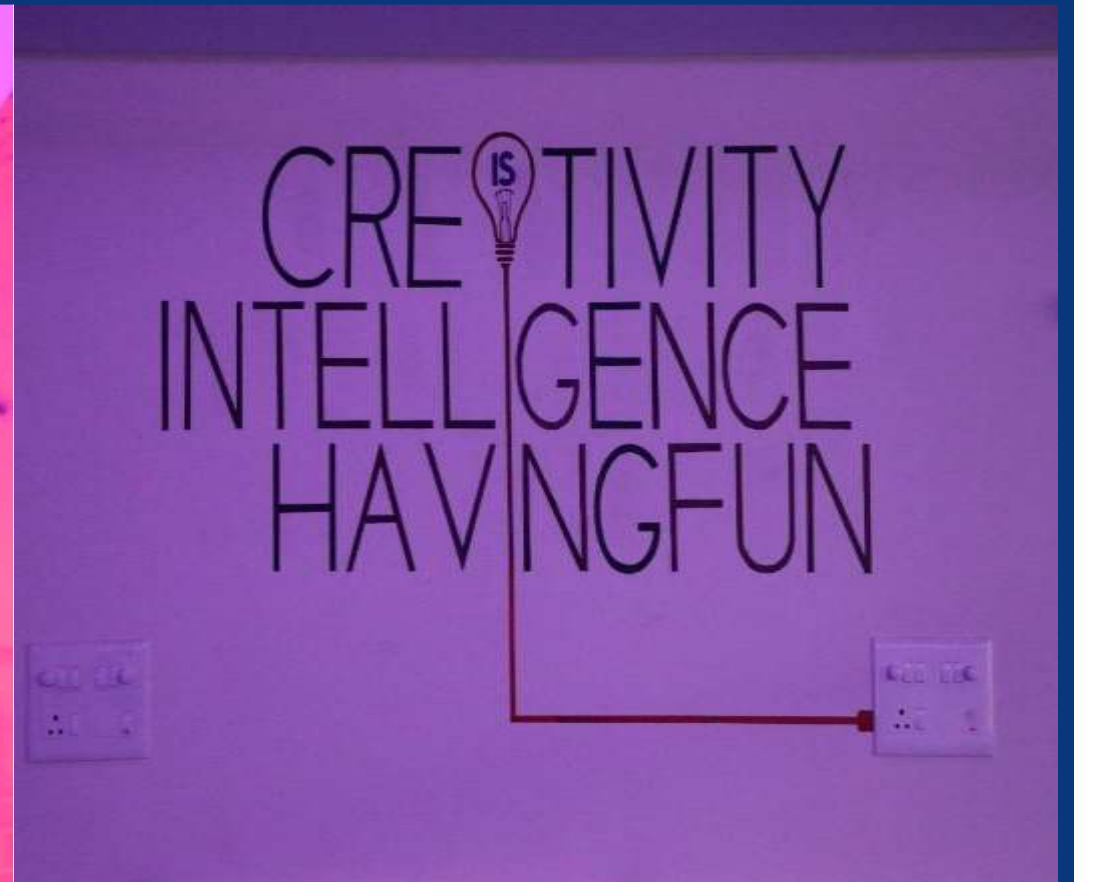




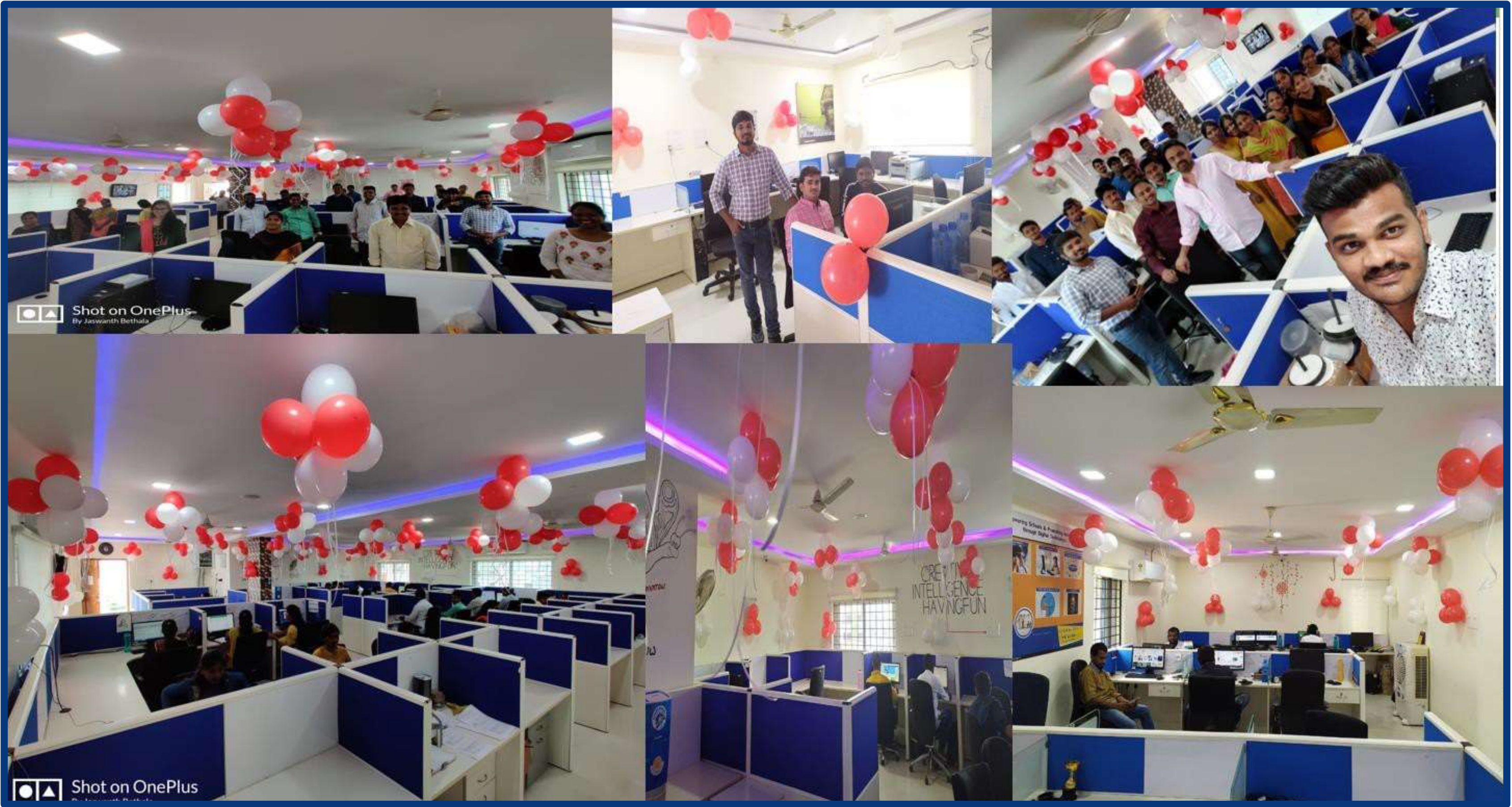


















**CIOReviewIndia**

*Recognizes*

**Digital Teacher**

*In Annual Roll of Honor*

*As one of the*

**"10 Most Promising  
Smart Classroom  
Solution Providers - 2019"**

*In commendation for their unbridled strive  
towards excellence and innovation in this field.*

*Sudhakar Singh*

Sudhakar Singh  
Editor  
CIOReviewIndia



**insightsuccess®**  
The way of business solutions

Code & Pixels Interactive Technologies Pvt Ltd  
is recognized by Insights Success magazine in



An annual listing of "Innovative E Learning Solution Providers in 2019"  
that are setting new standards for education and learning.

*Pooja M. Bansal*  
Editor-in-Chief

*Code & Pixels Interactive Technologies*

recognized by **siliconindia** Magazine as

**siliconindia** 10 MOST PROMISING  
**K-12 TECH**  
Service Providers - 2017

This annual listing of 10 Most Promising K-12 Tech Service Providers represents  
not only the glory of companies offering quality & efficient technology services to the  
K-12 segment, but also recognizes businesses impacting the marketplace

*Anamika Sahu*  
Managing Editor



We Measure our  
Success  
**By our Client's  
Success**



*Happy Clients*

AWARDS ARE GREAT, REFERENCES ARE AWESOME.. BUT WHAT IS MOST IMPORTANT TO US IS THAT OUR CLIENTS ARE HAPPY!





## ABOUT THE COMPANY



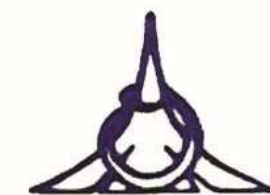
Registered with: ISO 9001 : 2015 Quality Certified Company



Code and Pixels, an ISO 9001: 2015 company headquartered in Hyderabad employs the best talent in the industry with a range of specializations including Subject Matter Experts, Instructional Designers, Multimedia Specialists, Software Professionals and Consultants.

We are a specialist e-learning company, providing Simulation & Training Solutions, Content Engineering Services, Consultancy Services and IT Services to the Industry.

### BFSI, Defence and Government Organizations



RailTel Corporation of India Ltd  
(A Miniratna Category - I Enterprise)



Army Air Defence College



MHRD  
Govt. of India



BHARAT DYNAMICS LTD  
(A Govt. of India Enterprise)



Sardar Vallabhbhai Patel  
National Police Academy



Rural Development  
of AP



Digital India  
Power To Empower



## Universities



Jawaharlal Nehru  
University



University of Mumbai



Sri Ramachandra  
University



Avinashilingam  
University



National Institute  
of Nutrition



Tilak Maharashtra  
University



University of Madras



University of Calcutta

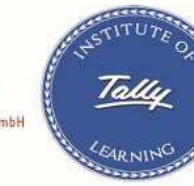


Anna University



INDIAN  
INSTITUTES  
OF PUBLIC  
HEALTH

## Corporates



**Partnering** with the best to deliver exceptional quality & value

All logos, and brands of clients are property of their respective owners. All company, product and service names used in this brochure are for identification purposes only. Use of these names, logos, and brands does not imply endorsement.





**Design and Development of Interactive Electronic Technical  
Manuals CBTs, Video Films and Training Aids**



# Defence - R&D centres and Production Agencies



आर सी आई



BrahMos Aerospace



भारत इलेक्ट्रॉनिक्स  
BHARAT ELECTRONICS



Electronics Corporation of India Limited

A Govt. of India (Dept. of Atomic Energy) Enterprise



BHARAT DYNAMICS LTD.

(A Govt. of India Enterprise)



Design and Development of  
Interactive Electronic technical  
Manuals development



# Defence Sector - IETM & E-learning Solutions





# Defence Sector - IETM & E-learning Solutions



Marine Electricals



DESMI



MAN Energy Solutions  
Future in the making



प्रत्यक्षं किम् प्रमाणं



राइफल फैक्टरी ईशापुर  
RIFLE FACTORY ISHAPORE

FläktGroup®



# Defence Sector - IETM & E-learning Solutions





# Defence Sector - IETM & E-learning Solutions







## Defence Sector - IETM







## Defence Sector - IETM



 **CODE & PIXELS**  
Interactive Technologies Private Limited

**IETM Level - 5**  
**(JSG 0852: 2001)**

 **NOVA INTEGRATED SYSTEMS LIMITED**  
A **TATA** ENTERPRISE

 **TATA**

**Surface Surveillance Radar (SSR)**



## Defence Sector - IETM



 **CODE & PIXELS**  
Interactive Technologies Private Limited

  
आर सी आई

**Medium Range Surface to air Missile**  
- Indian Air Force **MRSAM (IAF)**

**IETM Level - 4 (JSG 0852: 2001)**



# Defence Sector - IETM

 **CODE & PIXELS**  
Values, People, Experience & Technology

Astra **Rafael**

Code and Pixels serves

**Astra Rafael**  
as a Technology Provider



## Defence Sector - IETM





## Defence Sector - IETM



Sniper Rifle 8.6x70mm

**IETM LEVEL-IV** (JSG 0852)





## Defence Sector - IETM





# Defence Sector - IETM



**Marine Electricals™**

**IETM Level - IV**

**IETM LEVEL-IV**  
(JSG 0852)



**CODE & PIXELS**





## Defence Sector - IETM



**Bullet Proof Security Vehicle (BPSV)**

**IETM LEVEL - IV**

(JSG 0852 : 2001)





## Defence Sector - IETM



# ASTRA - TECHNICAL DOCUMENTATION

(JSS 0251: 2015)





## Defence Sector - IETM





## Defence Sector - IETM



**IETM LEVEL-IV**  
(JSG 0852 : 2019)





## Defence Sector - IETM



**BAEHAL  
SOFTWARE LIMITED**

**IETM LEVEL-IV**

**(JSG 0852 : 2019)**



**CODE & PIXELS**





## Defence Sector - IETM



**IETM**  
**JSG 0852 : 2019**





## Defence Sector - IETM



**TIL**  
*Tractors India*

**Rough Terrain  
Hydraulic Crane (RT 760)**

**IETM Level -4  
(JSG 0852: 2001)**

**CODE & PIXELS**  
Interactive Technologies Private Limited

The image shows a yellow rough terrain hydraulic crane (RT 760) on a construction site. The crane is mounted on a heavy-duty chassis with large, treaded tires. The background features a blue sky with clouds and industrial structures in the distance. The text is overlaid on an orange and blue graphic design.



## Defence Sector - IETM



**CODE & PIXELS**  
Interactive Technologies Private Limited



**Marine Electricals**

**50 T BP Tugs**  
**\$1000D (IETM Level -4)**



## Defence Sector - IETM



# FLY THE BEST

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Defense, Homeland Security and Enterprise

[Get in Touch](#)

[About SWITCH UAV](#)





## Defence Sector - IETM

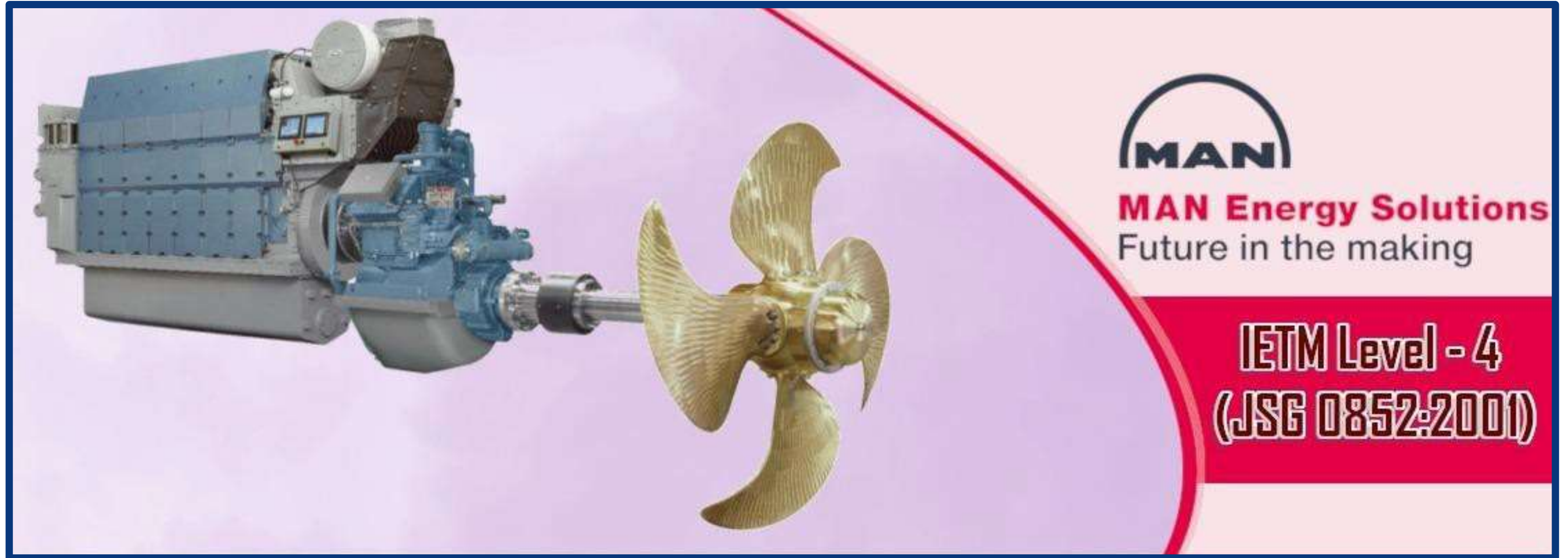
**DESMI**

**IETM Level - 4  
(JSG 0852:2001)**





## Defence Sector - IETM





## Defence Sector - IETM



**CODE & PIXELS**  
Interactive Technologies Private Limited

**Growing globally**

**NAVCON**  
ADVANCED SYSTEMS

Top aerospace and defense company in **UAE**

**GROUND** Since 1999

**eca3G** 1,602 x 10<sup>7</sup>

Total lightning protection solutions  
expressly for advanced networked electronic  
IT-based systems, **Seoul, Republic of Korea**



## IETM - Level III/IV/V



**LARSEN & TOUBRO**



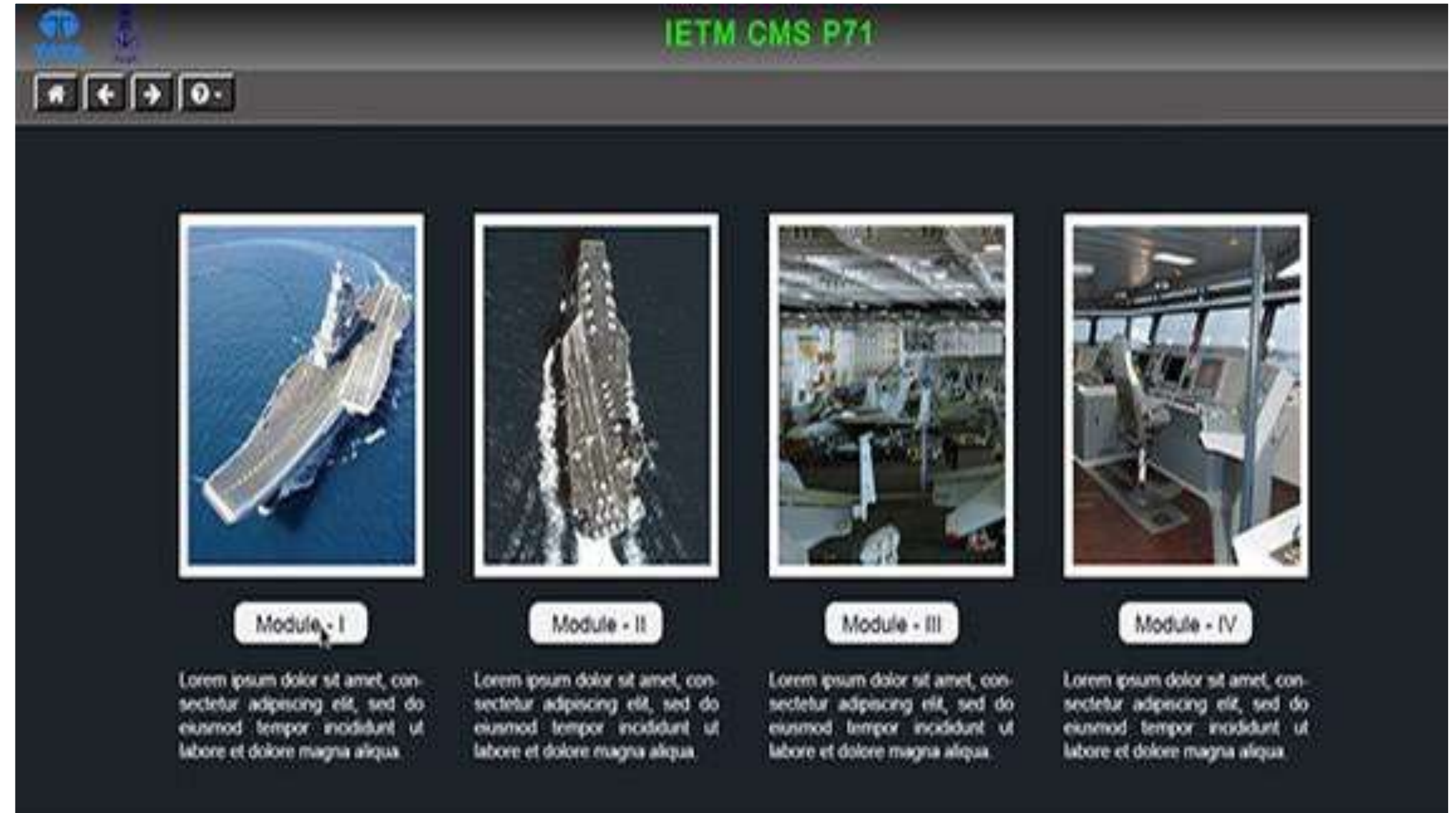
Indian Navy

IETM - DEMO SYSTEM





## IETM - Level III/IV/V







**ANANTH TECHNOLOGIES LTD.**







**IETM**

**IETM LEVEL - IV**

**JSG 0852 : 2021**





**IETM**

**IETM LEVEL - IV**    **JSG 0852 : 2021**







**BAEHAL  
SOFTWARE LIMITED**

**IETM LEVEL-IV**  
**(JSG 0852 : 2019)**



**CODE & PIXELS**











**TATA** ADVANCED SYSTEMS

**IETM**

**IETM LEVEL - IV** JSG 0852 : 2021



**CODE & PIXELS**









## IETMs of Level 3 and Level 4



**AKASH**



**AGNI**

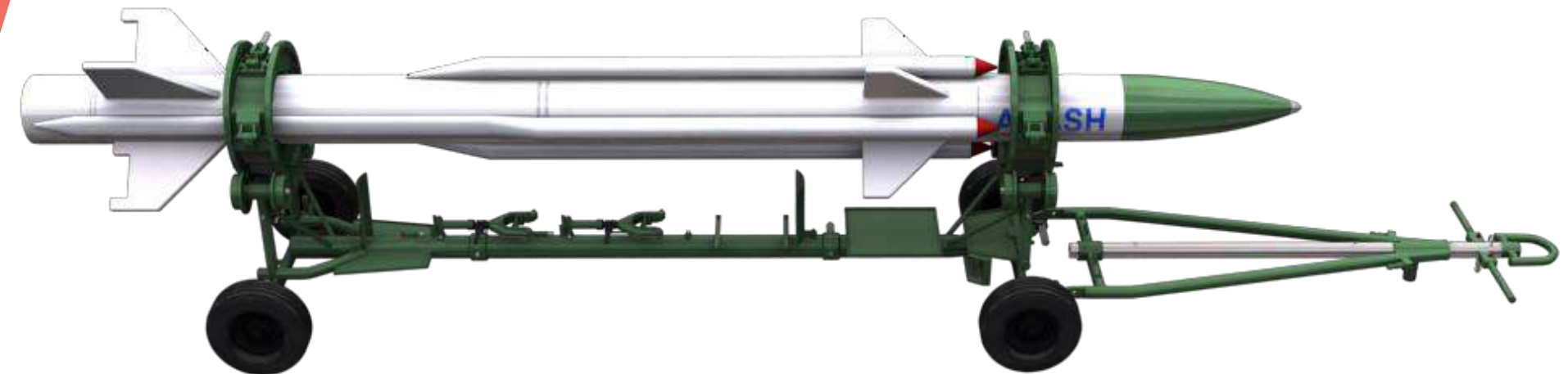


**BRHMOS**





## AKASH MISSILE and SUB SYSTEMS



  
**BHARAT DYNAMICS LTD.**  
(A Govt. of India Enterprise)





BDL - AKASH MISSILE IETM



POONA BEARING  
- Missile Handling Trolley (MHT)  
IETM



POONA BEARING  
Missile Handling Trolley Vehicle  
(MHTV) IETM





HITECH HYDRAULICS

- Missile Transportation Vehicle (MTV) IETM



HITECH HYDRAULICS

- Akash Tent Vehicle (ATV) IETM



TIL

- Transport Cum Loader Vehicle (TLV) IETM



TIL

- Akash Auto Crane (AAC) IETM



ECIL

- Mobile System for Missile Checkout (MSMC) IETM



ECIL

- Combat Command Control Centre (CCC) IETM





TATA

- Akash Army Launcher (AAL) IETM

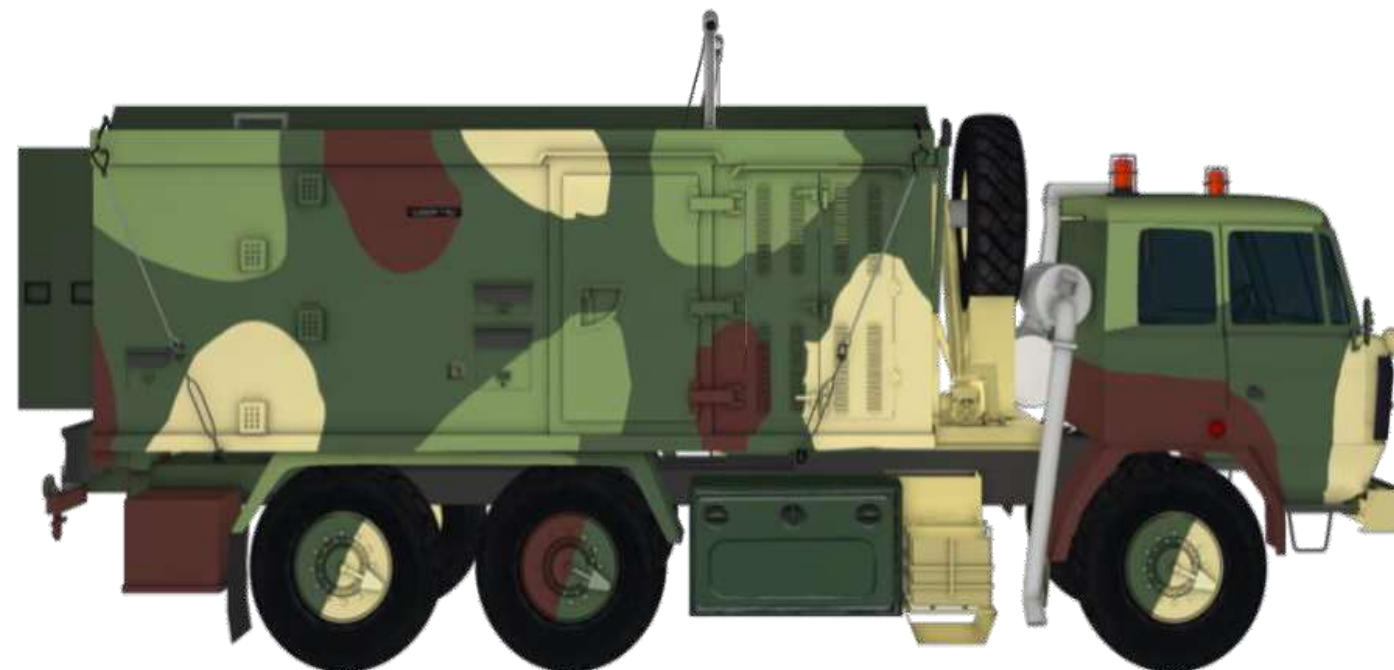


TATA

- Mobile Launcher Repair Station  
(MRLS) IETM



## Mobile System for Missile Checkout (MSMC)



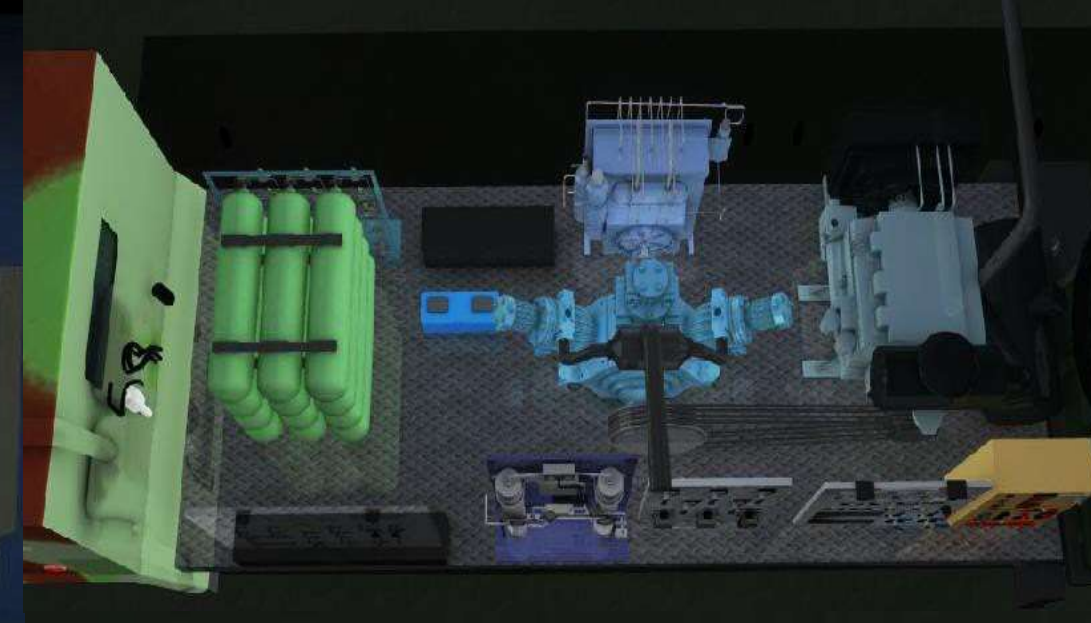
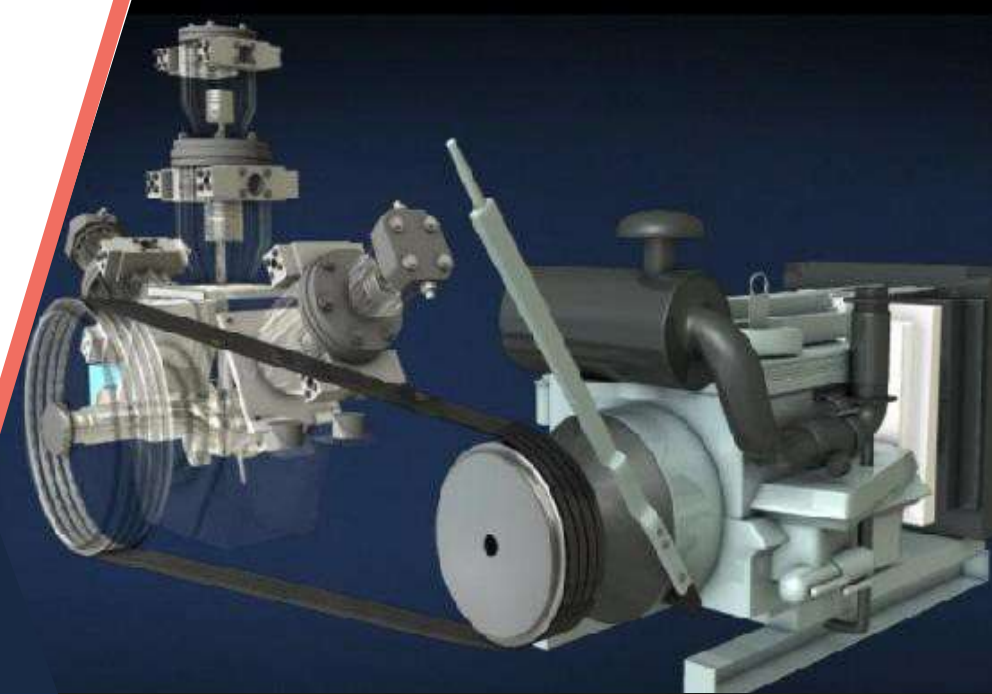
**Registered Vendor**

**इको ईसी**  
**Electronics Corporation of India Limited**  
A Govt. of India (Dept. of Atomic Energy) Enterprise



## INDIAN DEFENCE

*Kirloskar*





## Transporter Cum Loader Vehicle (TCLV)

## IETM & Training Aids





## INDIAN DEFENCE



**Missile Transportation Vehicle**





**Computer Based Training  
on  
RT 630C-HD**



USERNAME:

PASSWORD:

**SUBMIT**



**mahindra**  
DEFENCE

Light Bullet Proof Vehicle (LBPV)



**Computer Based Training  
on  
LIGHT BULLET PROOF VEHICLE**



**mahindra**  
DEFENCE

USERNAME:

PASSWORD:

SUBMIT





## AKASH MISSILE SYSTEM (AMS)



### Transporter Cum Loader Vehicle (TLV)



### Computer Based Training

 Username

 ● ● ● ● ● ● ● ●

Login





# CODE & PIXELS

Values, People, Experience & Technology

## A Presentation on **IETM Level - IV**

Registered With :

एन. एस. आई. सी.  
**NSIC**  
ISO 9001 : 2008  
National Small Industries Corporation  
राष्ट्रीय लघु उद्योग निगम लिमिटेड



**MSME**  
सूक्ष्म, लघु एवं मध्यम उद्योग  
MICRO, SMALL & ENTERPRISES

**NASSCOM**  
MEMBER



TNV Certification UK Ltd.





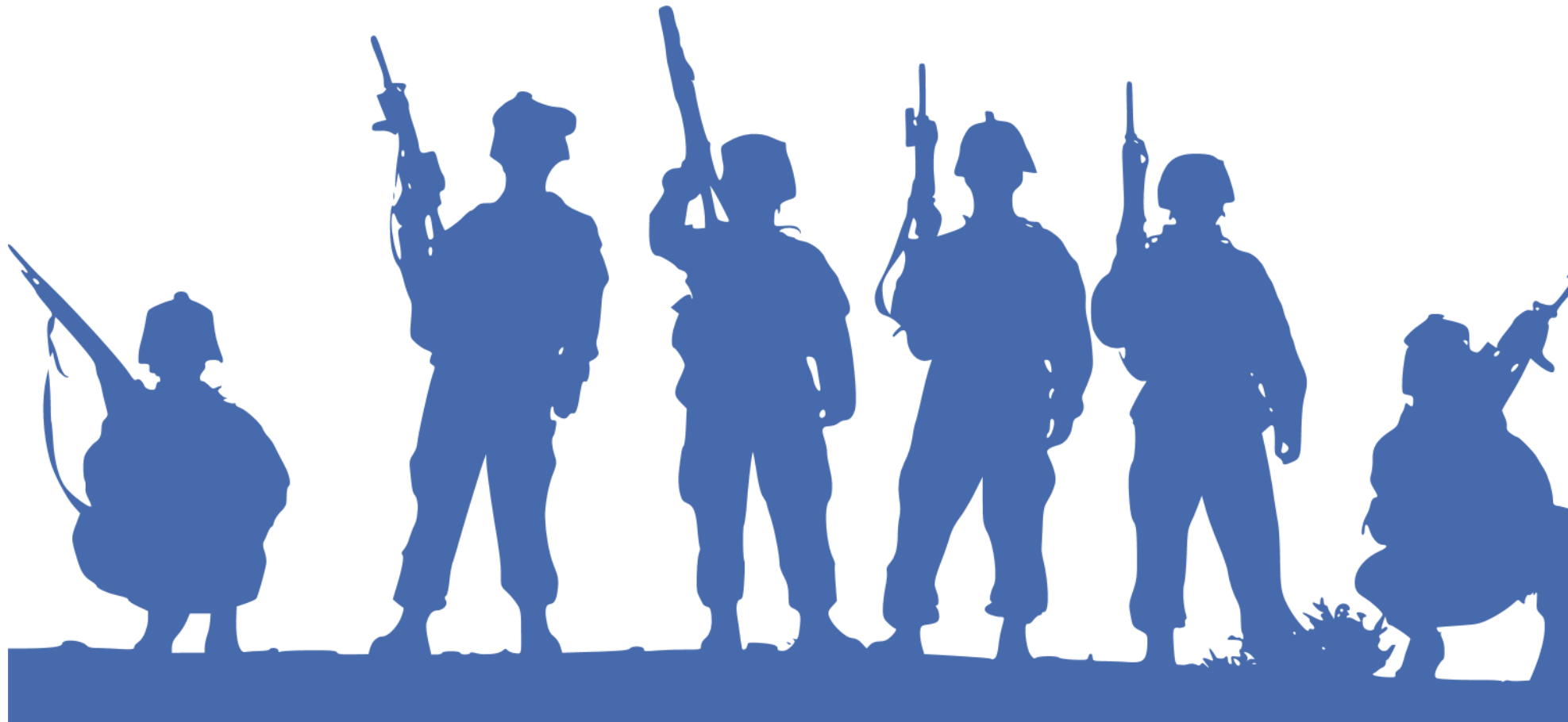
**IETM**

**Interactive Electronic Technical Manual**





- ❖ If you are a supplier of defence then along with the system/equipment you also need to provide Training Aids



CBT



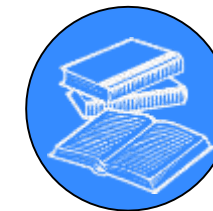
Charts and Bloups



Video Film



Training Work Modules



Manuals Hard Copies



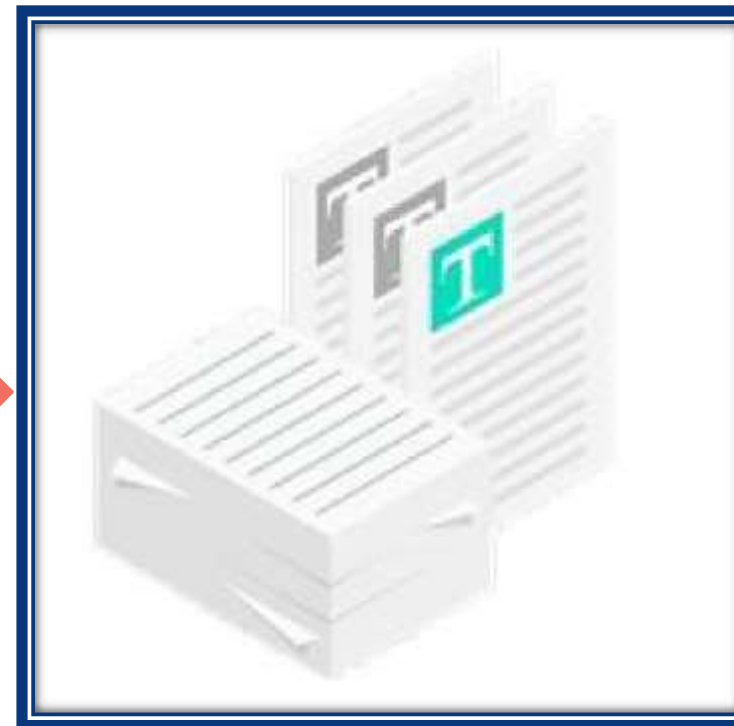
IETM



- ❖ For example, the maintenance and operation manuals of a warship, which used to occupy 300 -350 sq. feet of prime area with thousands of pages of technical literature



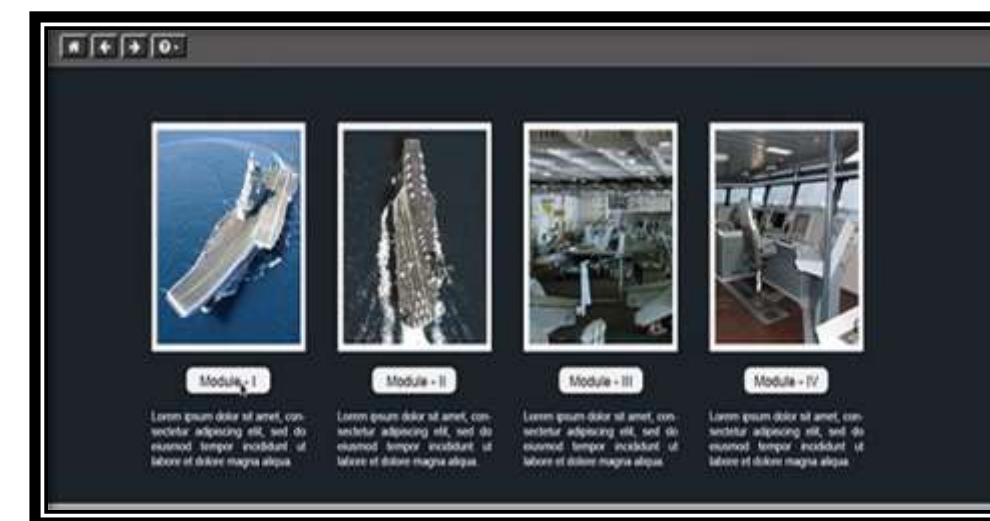
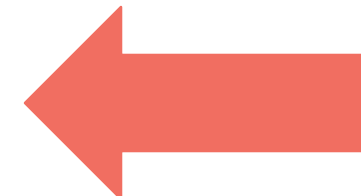
Deliver hard copies  
of manuals



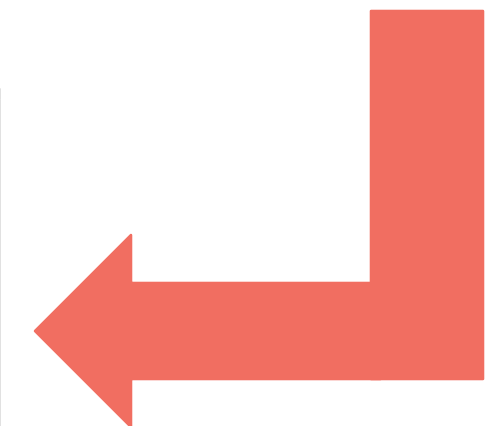
Occupy 300 -350 sq.  
feet of prime area



Difficult to refer some operating process or  
trouble shooting from thousands of hardcopies



To address these issues  
IETMs were introduced





## Paper Based Manuals



User Handbook (UHB)

Design Specification (DS)

Technical Manuals (TM)

Illustrated Spare Parts List (ISPL)

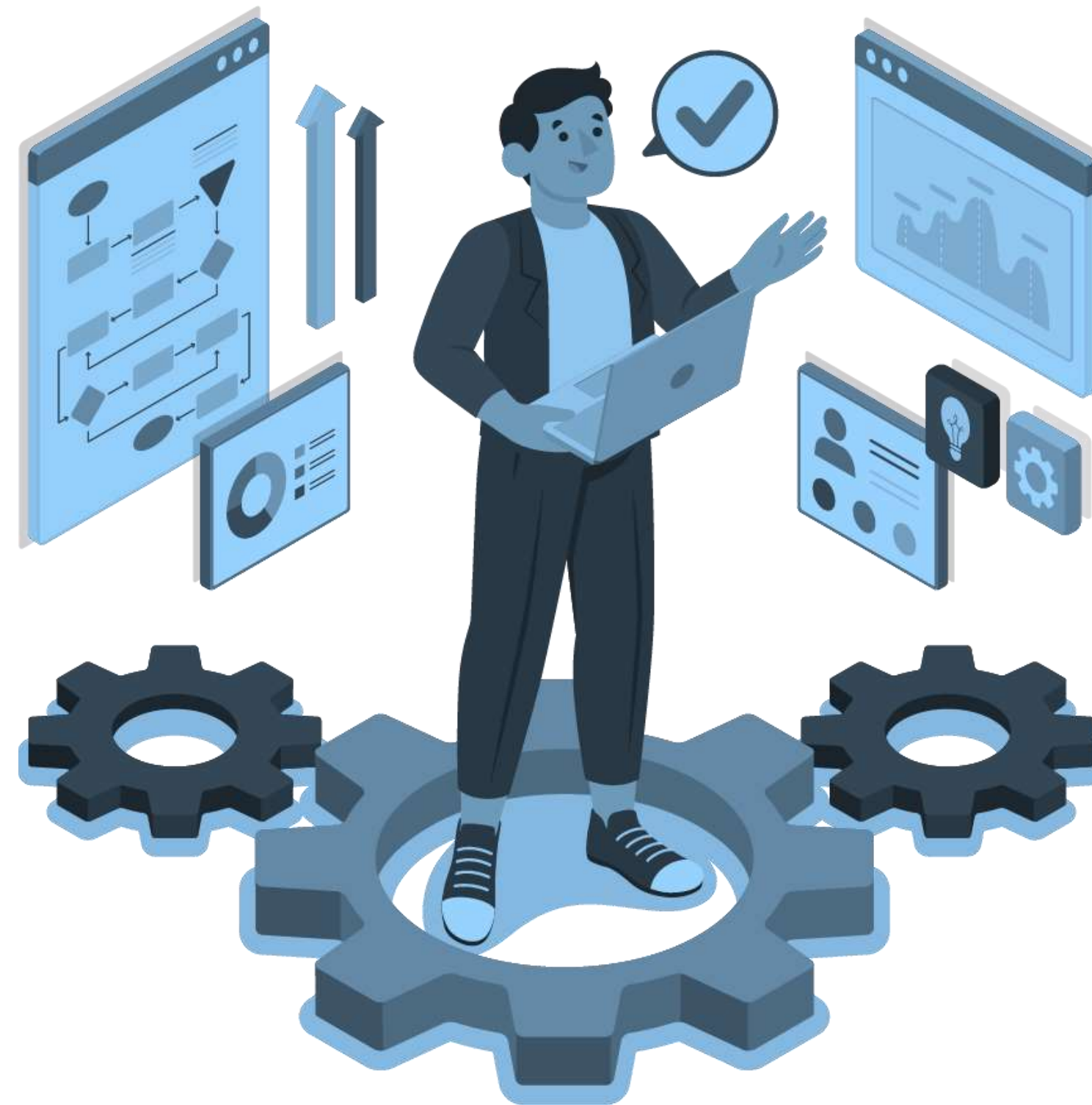
Manufactured Recommended List of Spars (MRLS)

Diagnostics and Installation (DIM)



**Electronic Format (IETM) / DIGITAL Format**





- ❖ IETMs are a portable, electronic "library" which contains thousands of pages of documentation and images and allows end users to trace technical documentation in a more efficient manner.



## Manual



Manual means any literature organized or written in a prescribed manner to guide the user

## Technical Manual



This means the literature is technical, like user manuals, maintenance manuals etc. Hard copy

## Electronic Technical Manual



This means the manual is available in the form of an electronic version which simply means digital format or softcopy. It can be a PDF file or a database-driven software application

## Interactive Electronic Technical Manual



Let us first understand the meaning of Interactive.



The meaning of interactive is two people or things influencing each other.



Allowing a two-way flow of information between an electronic device /computer and a user; responding to a user's input.



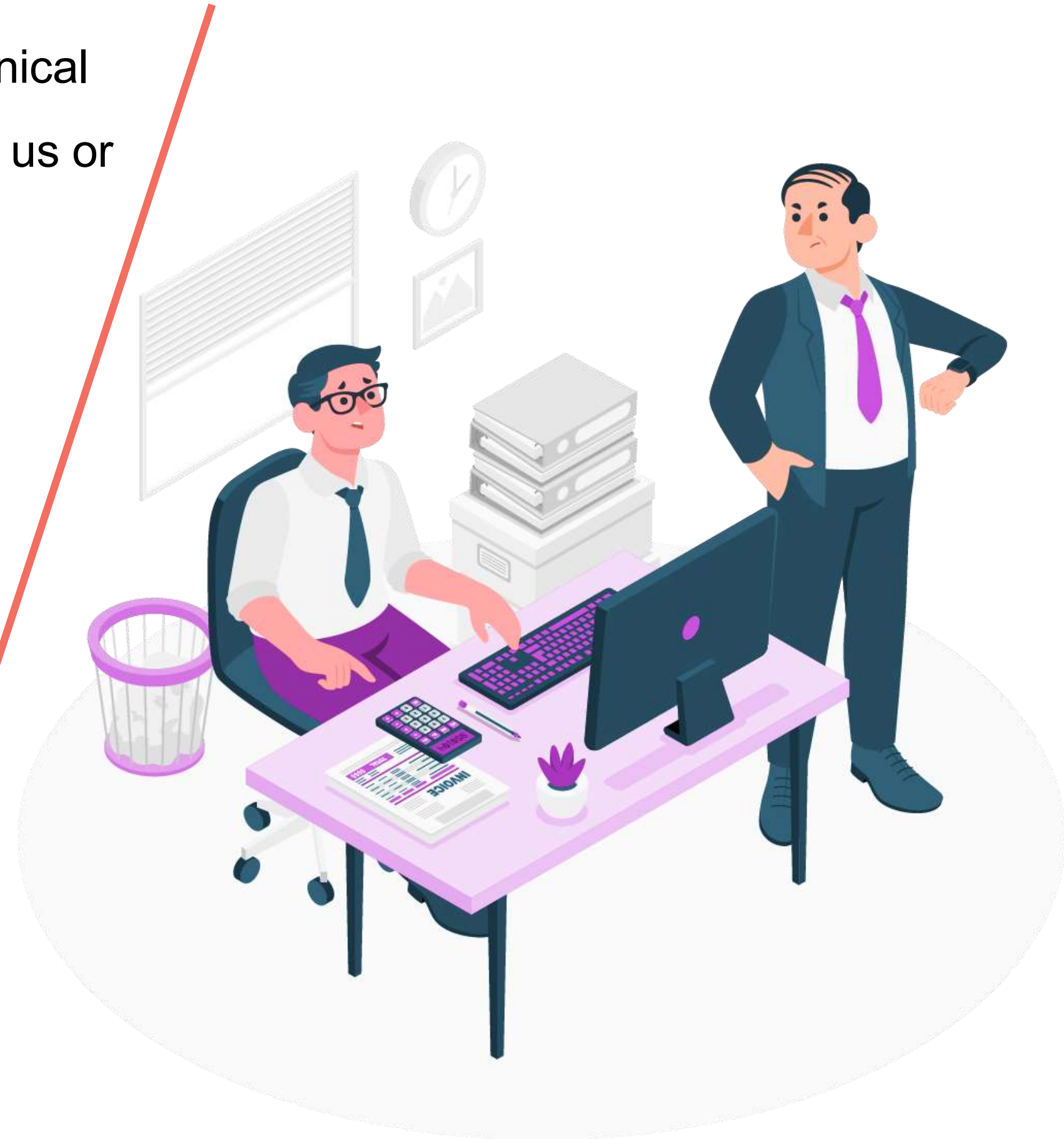
Involving the actions or input of a user. Especially



It means when the Electronic User manuals Interact and respond with the user, that is you, it will become an Interactive Electronic Technical manual.



- ❖ As per the above definitions, it is clear that we need a Technical Manual that too in soft copy and which will be able to talk to us or able to respond to us.
- ❖ When the Manual responds to user questions then it is called an Interactive Electronic Technical Manual
- ❖ How will the document be able to respond?
- ❖ We need to embed or integrate this soft copy or content into one application so that the application will respond or interact.
- ❖ What are the common interactivity features so that the User will be able to get the information from the software?



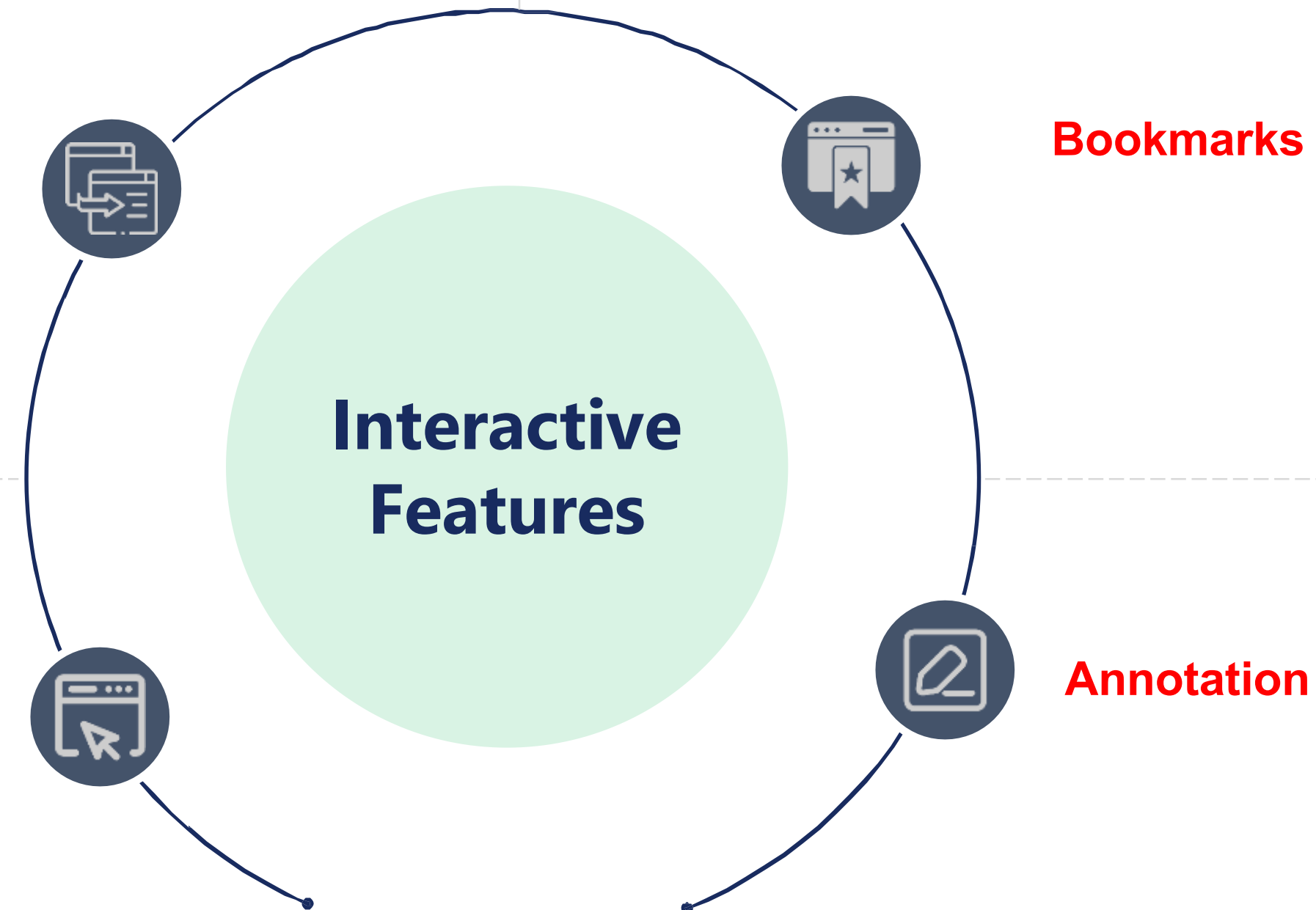


## Navigation

- **Linear navigation**(moving in the fixed or pre-defined path-next – previous topics)
- **Non-linear navigation** (User can go to any topic randomly)
  - Page Search
  - Global search
  - Best matched
  - Content tree
  - Related topics
  - Core IETM
  - Documents
  - Drawings

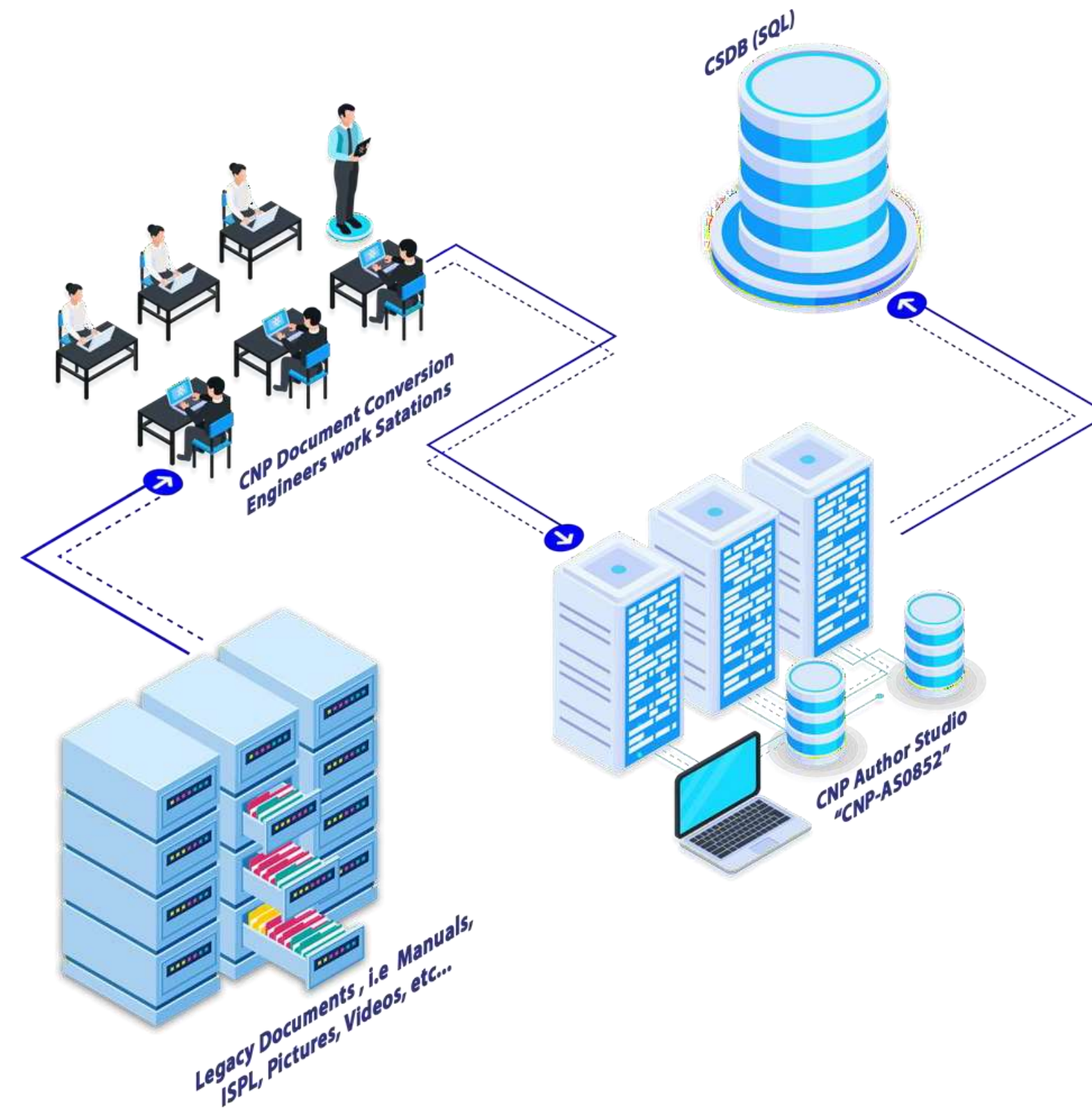
## Interactivity

- **Hyperlinks**
- **Hot Spots**
  - Text hotspot
  - Image hotspot
  - Video Hotspot





- ❖ The documents and pages are many hence, for easy and fast accessibility complete content is converted and stored as a database.



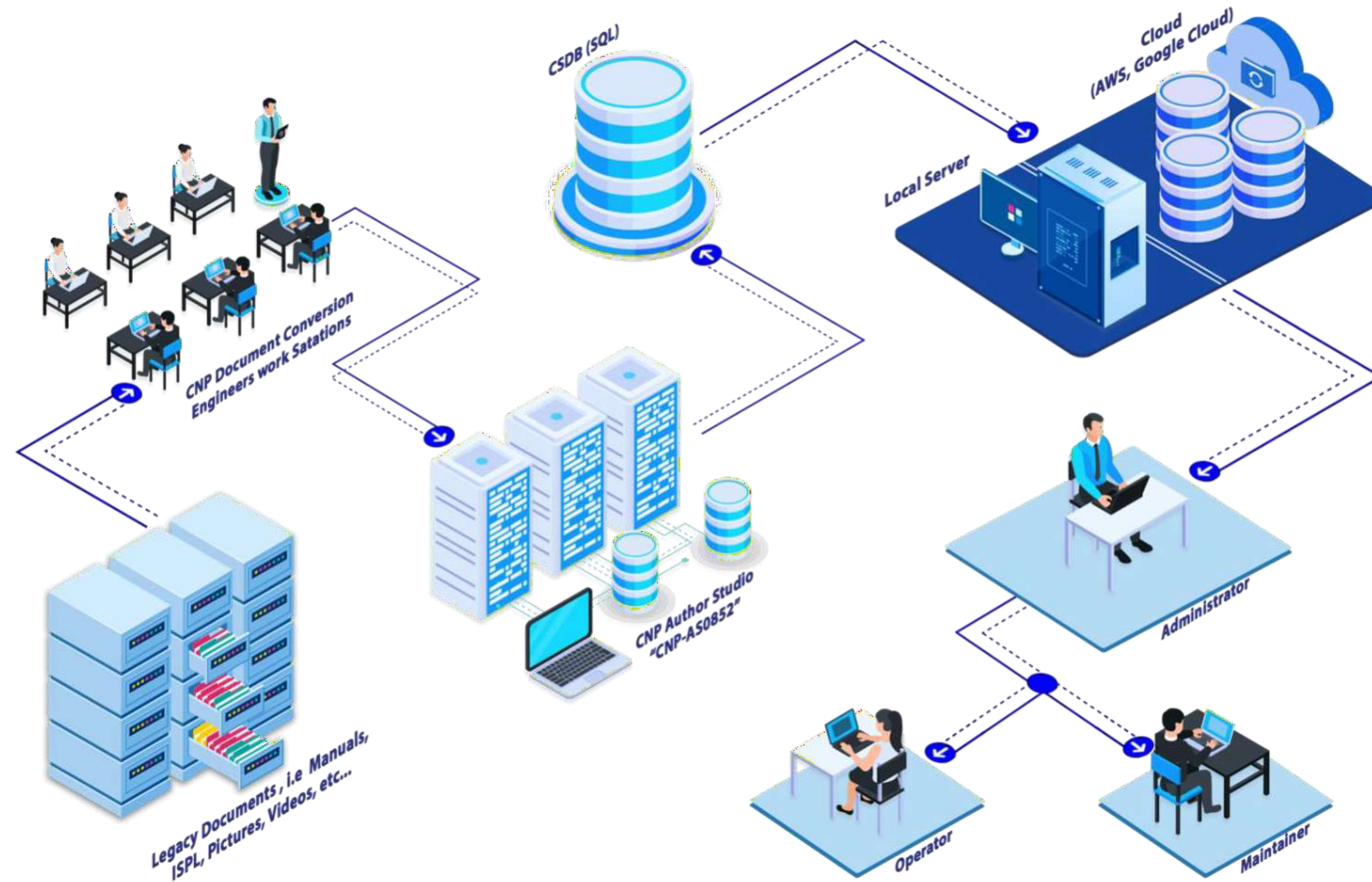


- ❖ Whenever the user wants some information, IETM software produces the information in a fraction of a second.





IETM is a combination of software applications and databases.







**Purpose of the Manual is to give information related to the equipment to the end user for quick reference.**



- ❖ All the technicality is written in detail so that when an issue arises, the user can refer to the manual, as every time OEM or technical person or subject matter expert might not be available on the spot to resolve the issue.



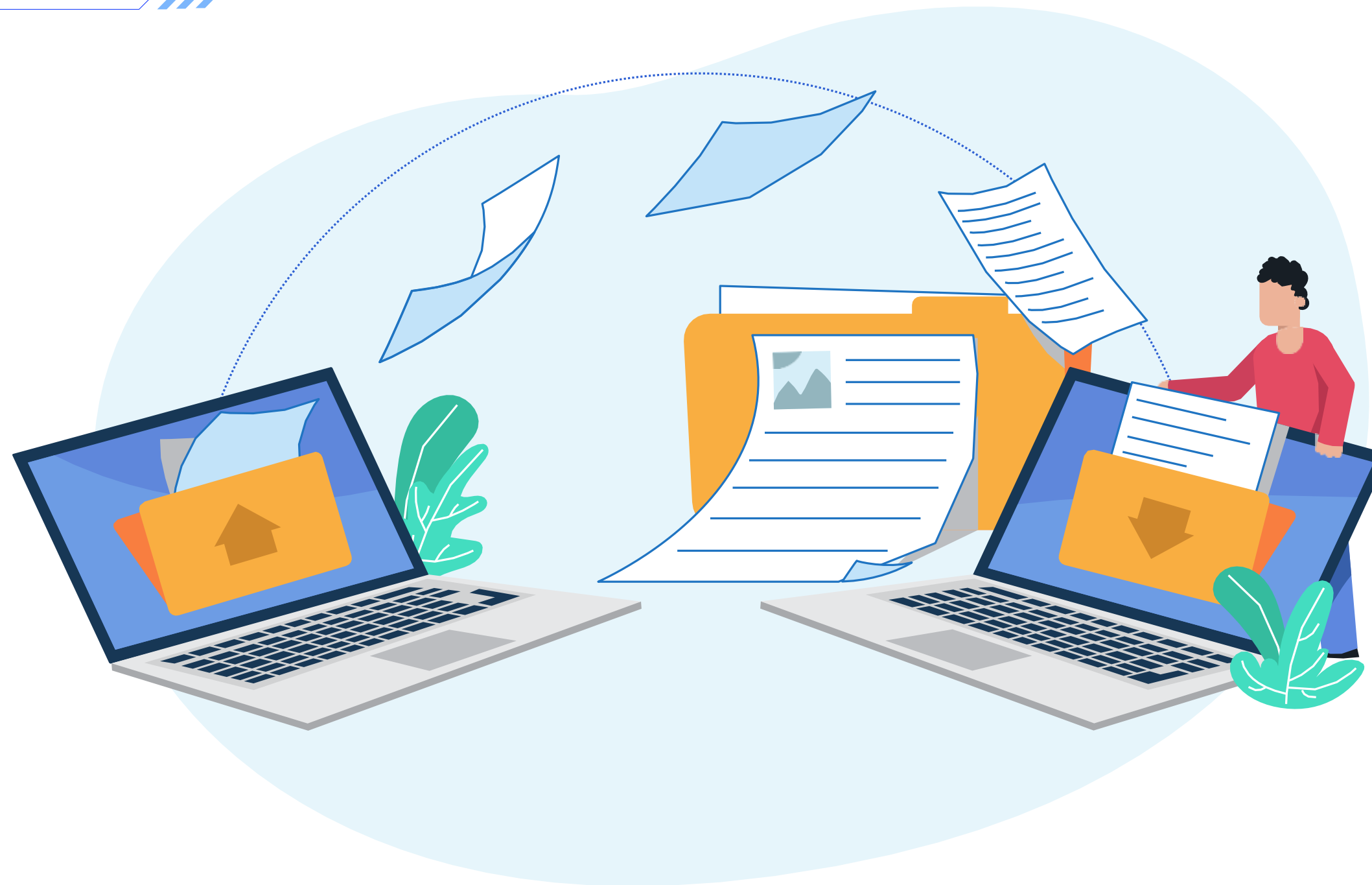


If the manual has 10 pages users can refer easily.



- ❖ But any system used by the defence will have multiple manuals and thousands of page counts and many times a user has to cross-refer between manuals, **Intra-manual** and **Inter-manual** to resolve the issue.





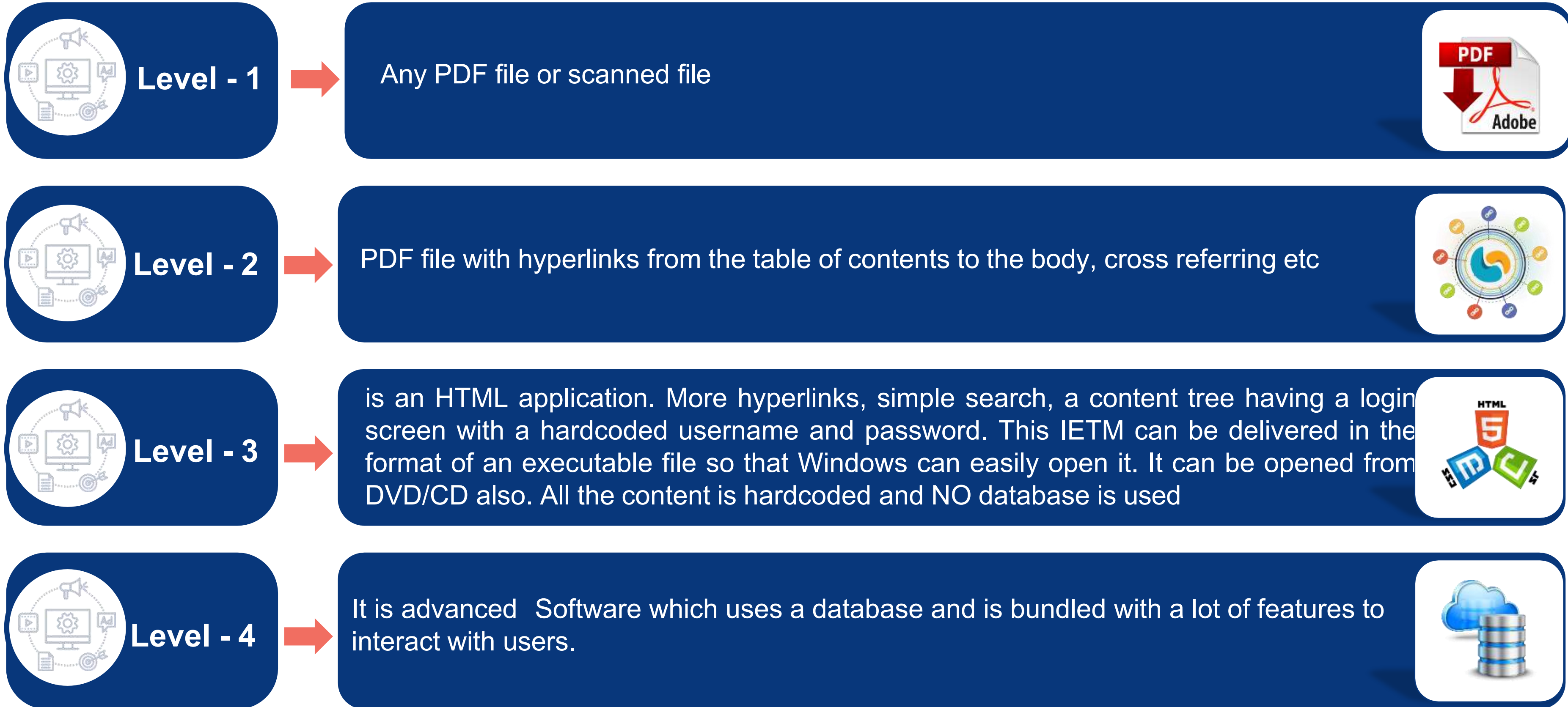
- ❖ Referring to 10- 15 hard-copy or even soft-copy books simultaneously will be difficult and time-consuming.



**Using IETM software, users can solve in a single click and seconds.**

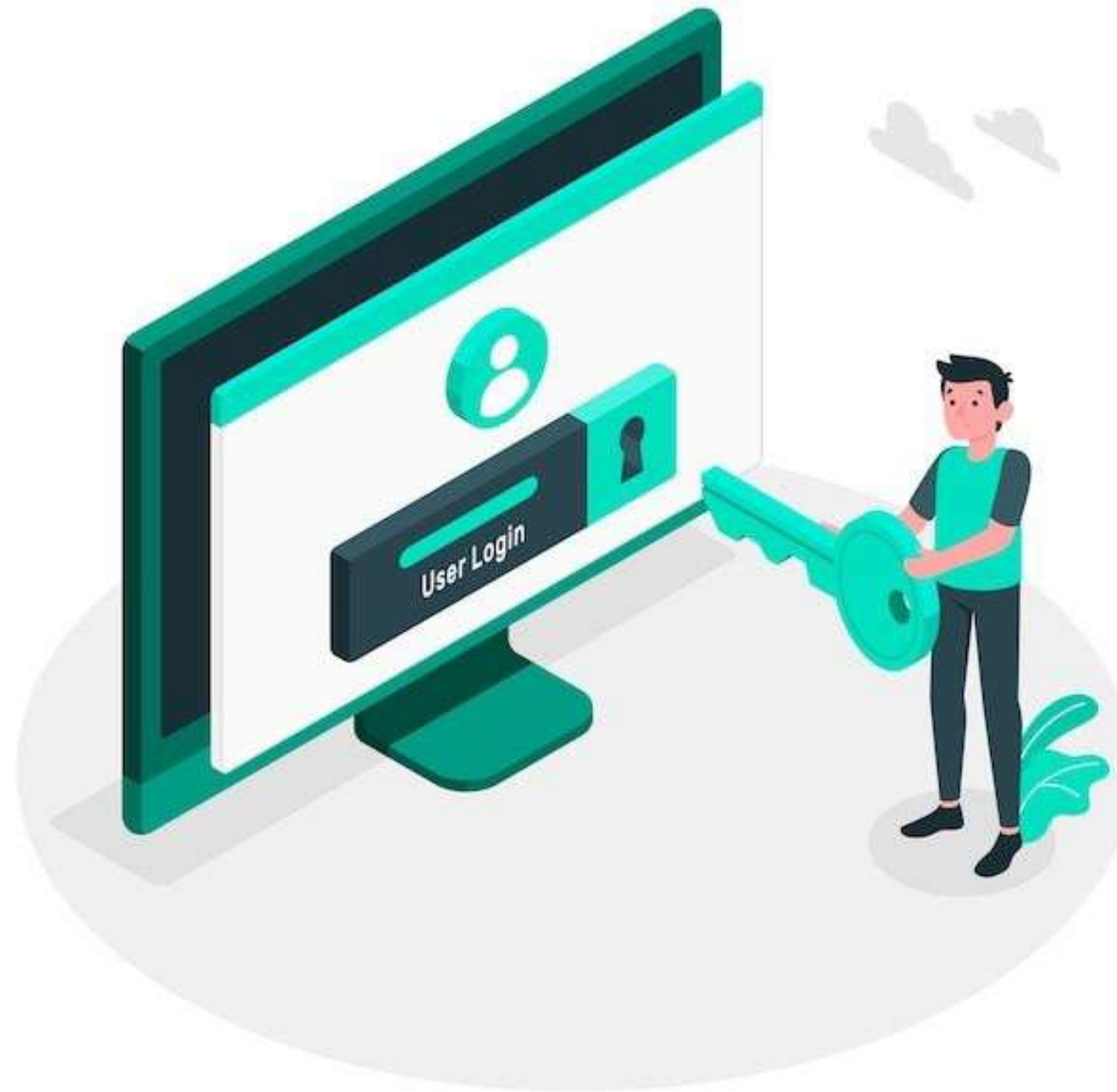






**Since 2018, Level 4 is being asked to supply by Indian Defense**

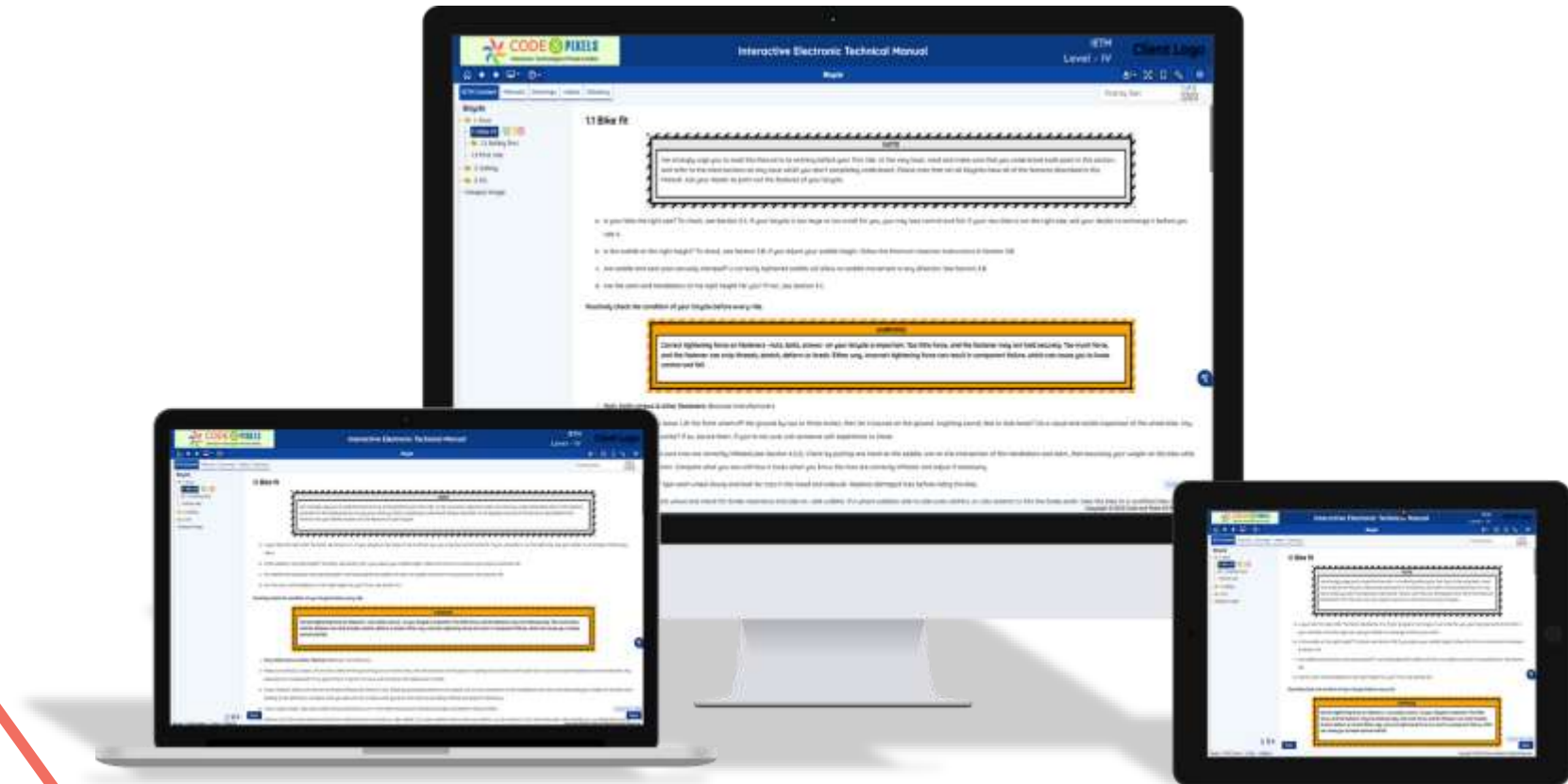






## IETM – Level 4

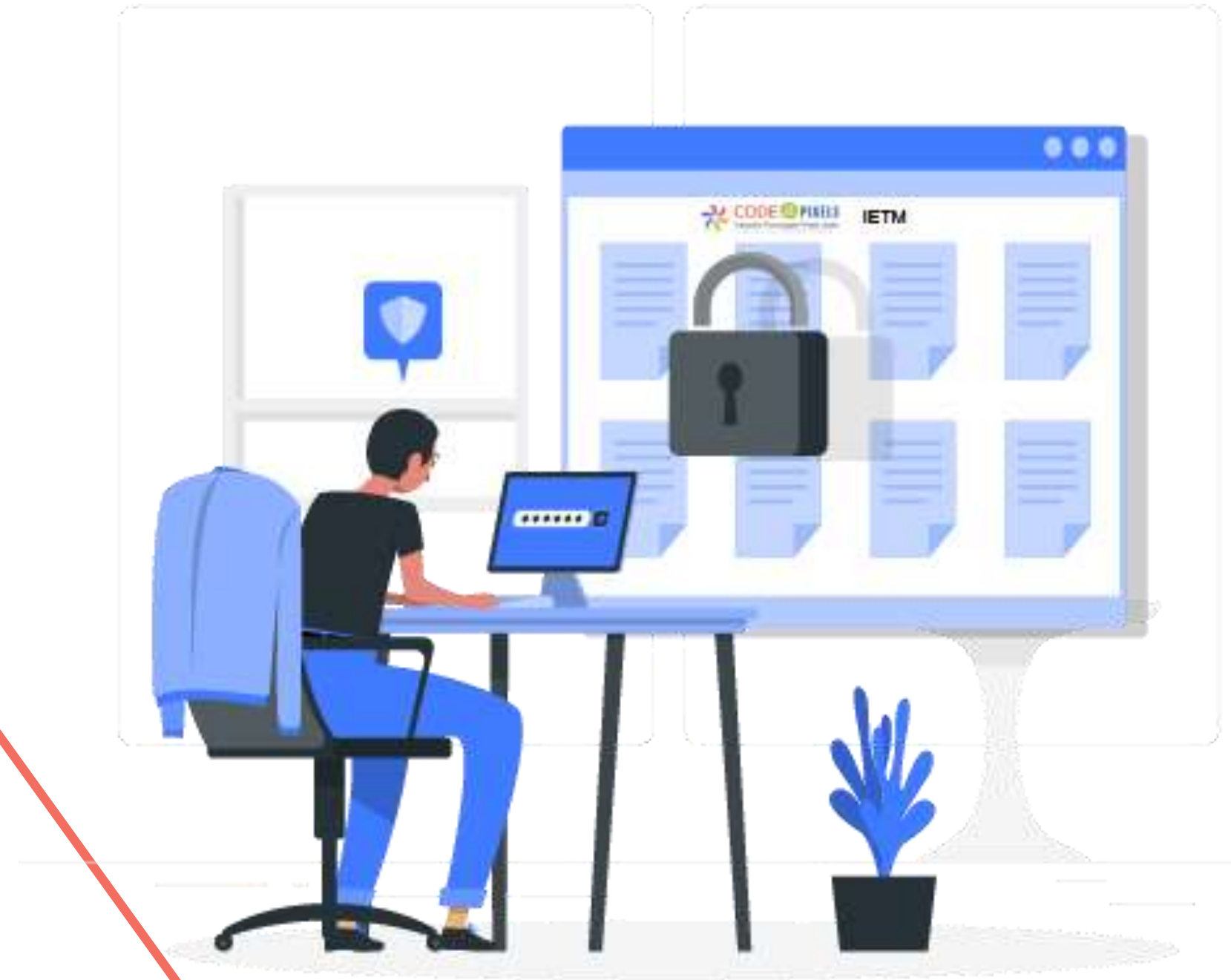
- ❖ IETM Level 4 is a web-based application like our bank software or any other web application.
- ❖ The graphic user interface will be provided to use IETM through which users can interact and get the desired data.





## IETM – Level 4

- ❖ IETM Level 4 is a web-based application like our bank software or any other web application.
- ❖ The graphic user interface will be provided to use IETM through which users can interact and get the desired data.
- ❖ Like all other standard software, Unauthorized users cannot access the IETM.
- ❖ IETM is Login login-based application. Only users having valid Login credentials can access the software.





## IETM – Level 4

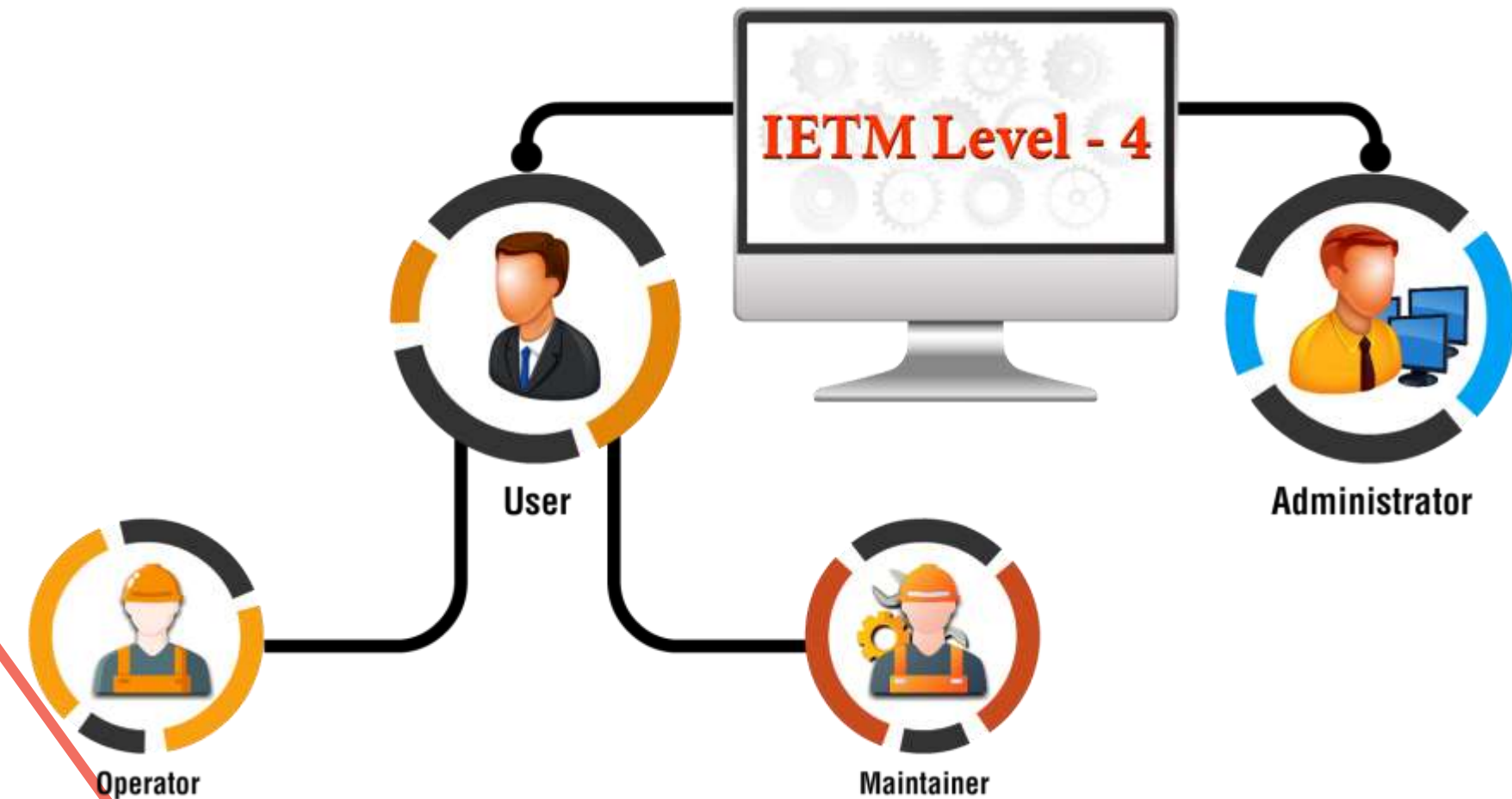
- ❖ IETM Level 4 is a web-based application like our bank software or any other web application.
  - ❖ The graphic user interface will be provided to use IETM through which users can interact and get the desired data.
  - ❖ Like all other standard software, Unauthorized users cannot access the IETM.
  - ❖ IETM is Login login-based application. Only users having valid Login credentials can access the software.
  - ❖ Based on the user log credentials data will be provided to the user.
- IETM has 2 types of users (Maintainer Operator) and one Administrator





## IETM – Level 4

- ❖ If the operator logs in, the user gets all the content related to operator use, similarly if the maintainer logs in only maintenance-related content is visible for that user.





## IETM – Level 4

- ❖ If the operator logs in, the user gets all the content related to operator use, similarly if the maintainer logs in only maintenance-related content is visible for that user.
- ❖ Ideally, all the content is available for both users, because the purpose of the IETM is to refer to the manual to fix the issue.





## IETM – Level 4

- ❖ If the operator logs in, the user gets all the content related to operator use, similarly if the maintainer logs in only maintenance-related content is visible for that user.
- ❖ Ideally, all the content is available for both users, because the purpose of the IETM is to refer to the manual to fix the issue.
- ❖ Administrators can create users who can see the user's navigation & log-in history and interact with the users using user dashboards through Annotations.





## IETM – Level 4

- ❖ If the operator logs in, the user gets all the content related to operator use, similarly if the maintainer logs in only maintenance-related content is visible for that user.
- ❖ Ideally, all the content is available for both users, because the purpose of the IETM is to refer to the manual to fix the issue.
- ❖ Administrators can create users who can see the user's navigation & log-in history and interact with the users using user dashboards through Annotations.
- ❖ In any case, Only **OEM** has the right to update or modify the content. Users can only refer to the content.







IETM Development Team

Content Data Base / IETM PAGES

**Step-1**

All Documents will be converted into IETM Database



**Step-2**

- Building a Table of Contents in the framework
- Copying IETM content in the framework
- All the text will be stored in a database



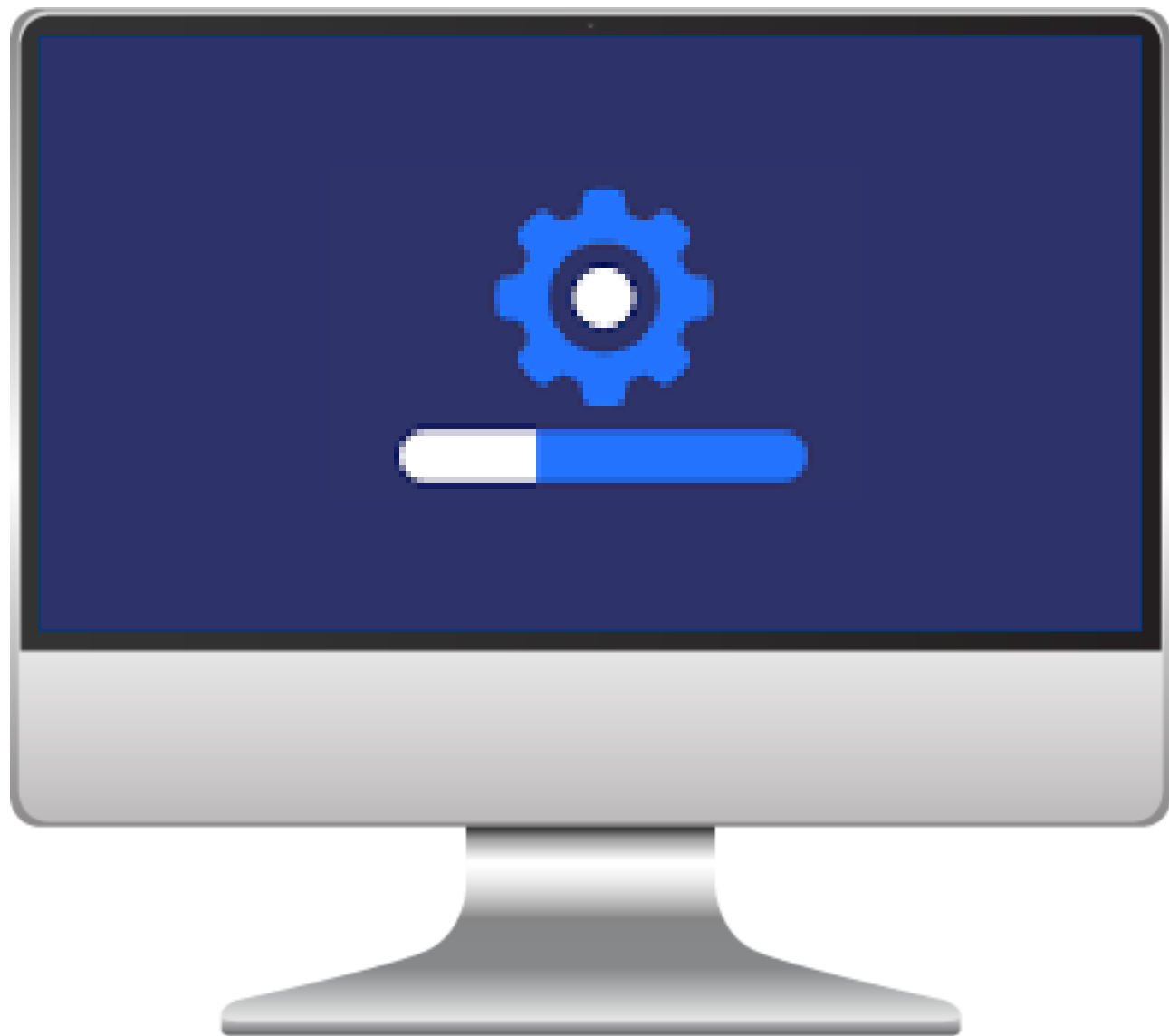
**Step-3**

Linkages between pages/frames

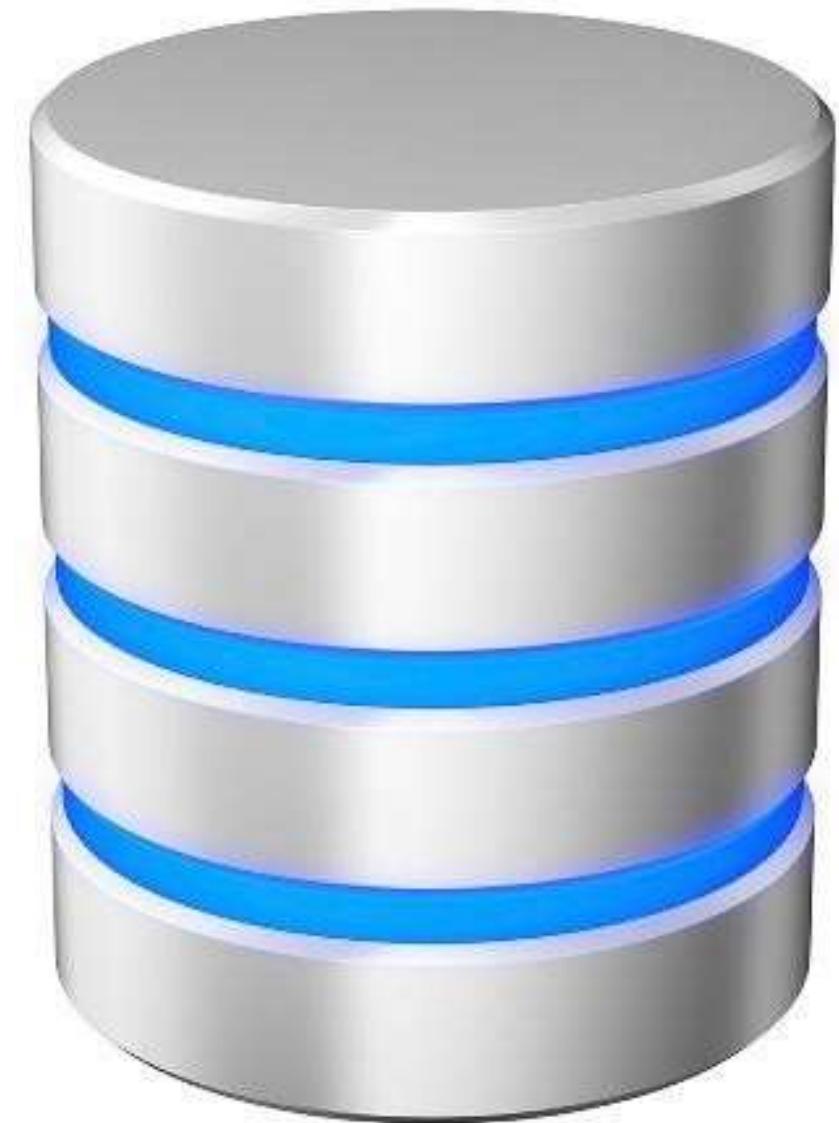
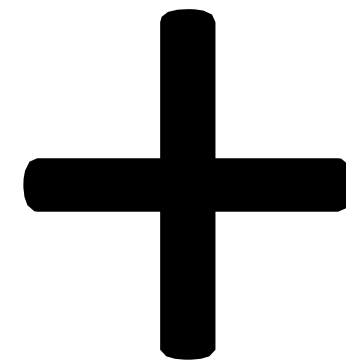




## IETM



IETM Viewer Software



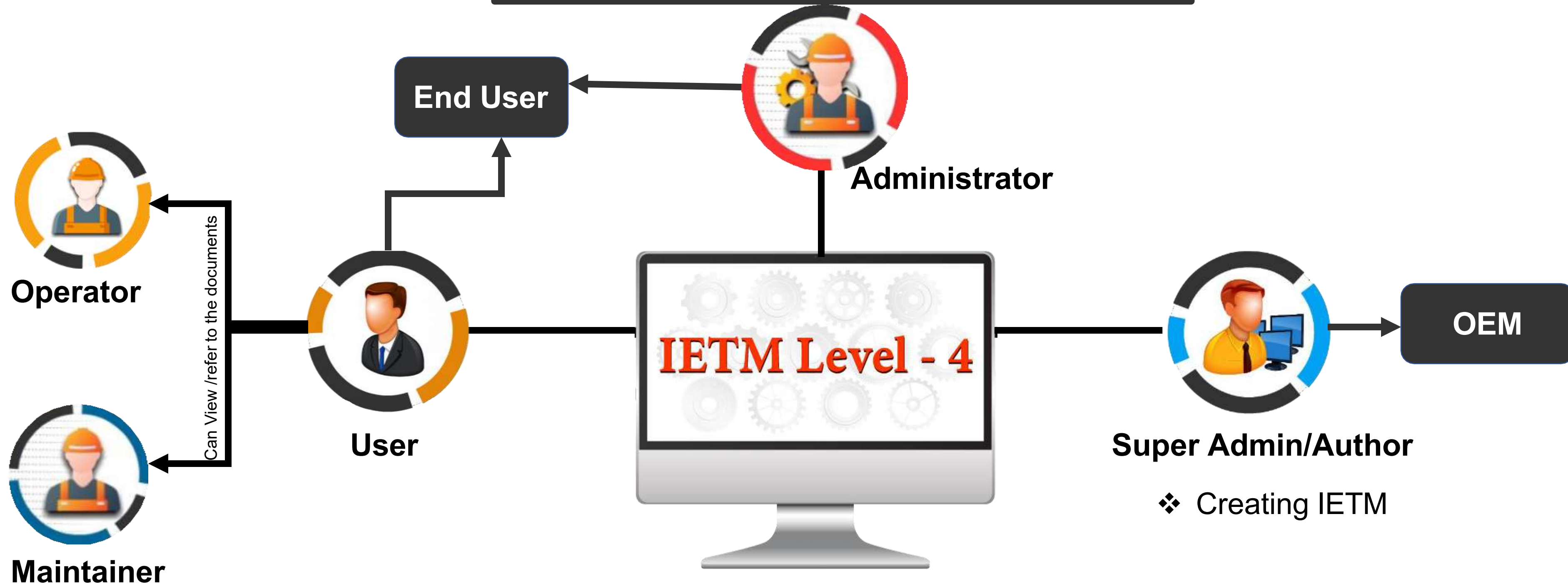
Data Base

All the Manuals & Images



# IETM USER TYPES

- ❖ Can manage users and also refer documents.
- ❖ Manage means the admin can create, edit and delete users and see user activity





**CODE & PIXELS**  
Values, People, Experience & Technology

**IETM**

**I**nteractive  
**E**lectronic  
**T**echnical  
**M**anuals

**Indian Defence Standard JSG: 0852**



**We are proud to be associated with Indian Defence (Army, Navy, and IAF).**



## Security

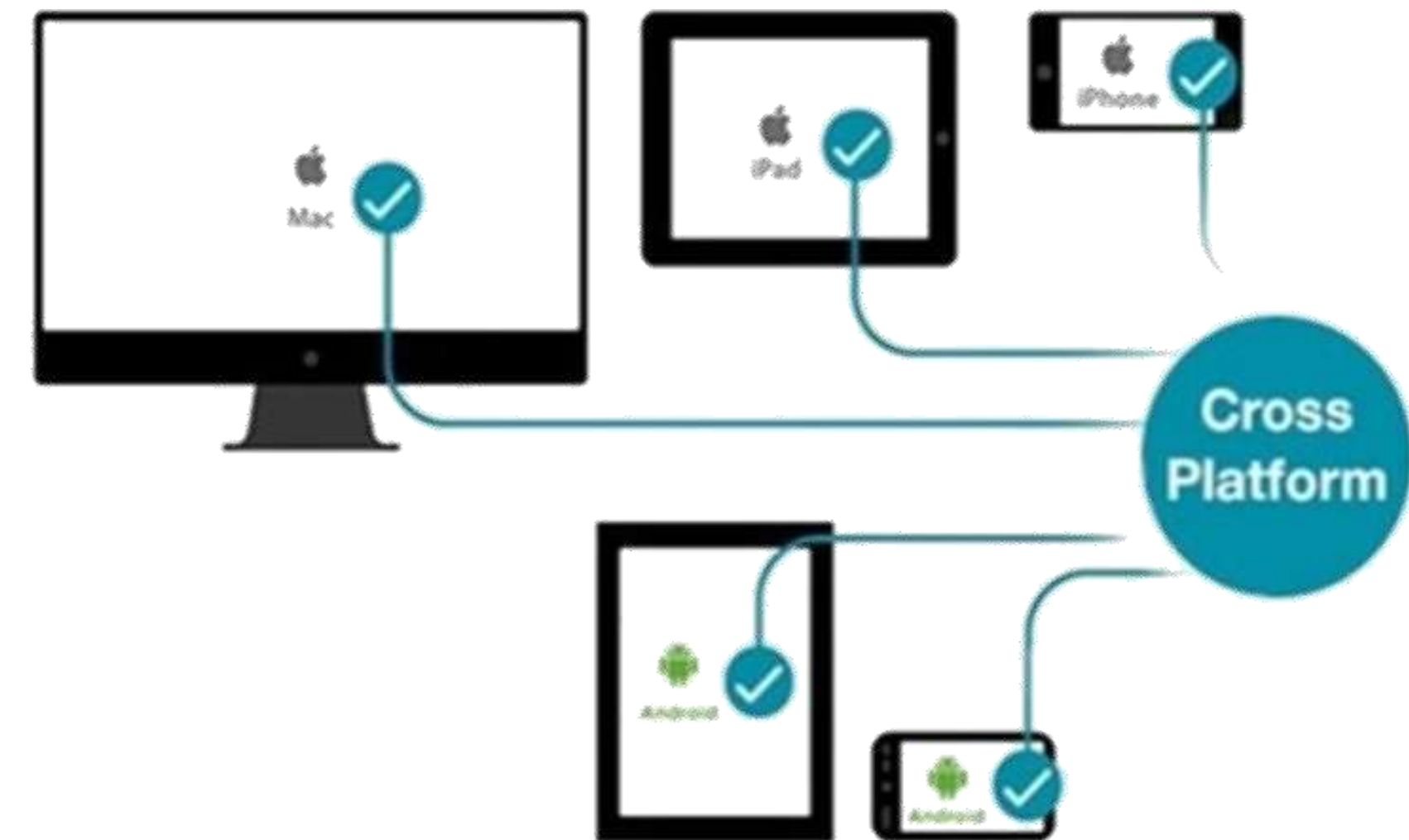


- ❖ Role based Login Control and Dynamic User access control (User, Admin)
- ❖ Dynamic User Access control to reduce the risk of unauthorized access to content data Role-based



## Cross Platform Compatibility & Deployment

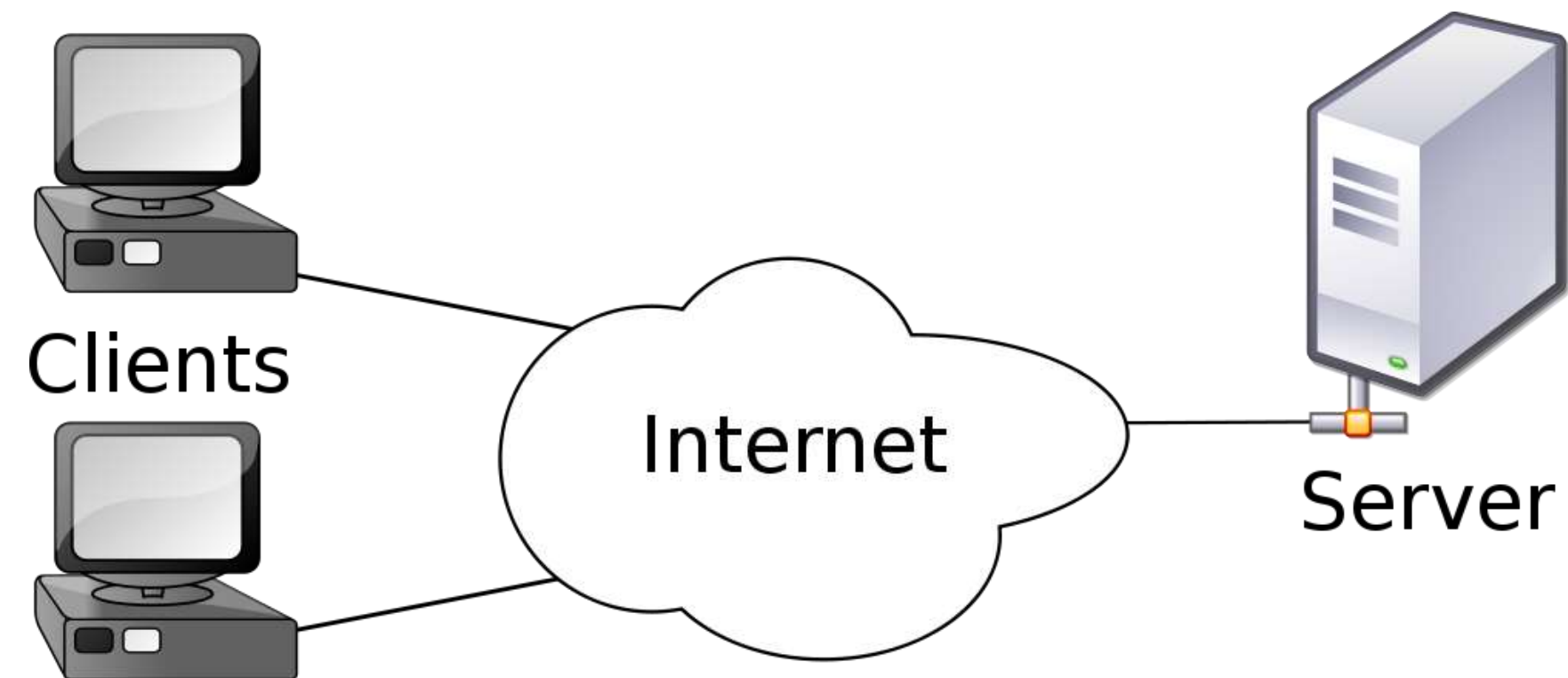
- ❖ Our IETM Frame work is cross platform compatible
- ❖ Code and Pixels Frame works is compatible for multiple devices i.e. Lap tops, PCs, Tablets etc.



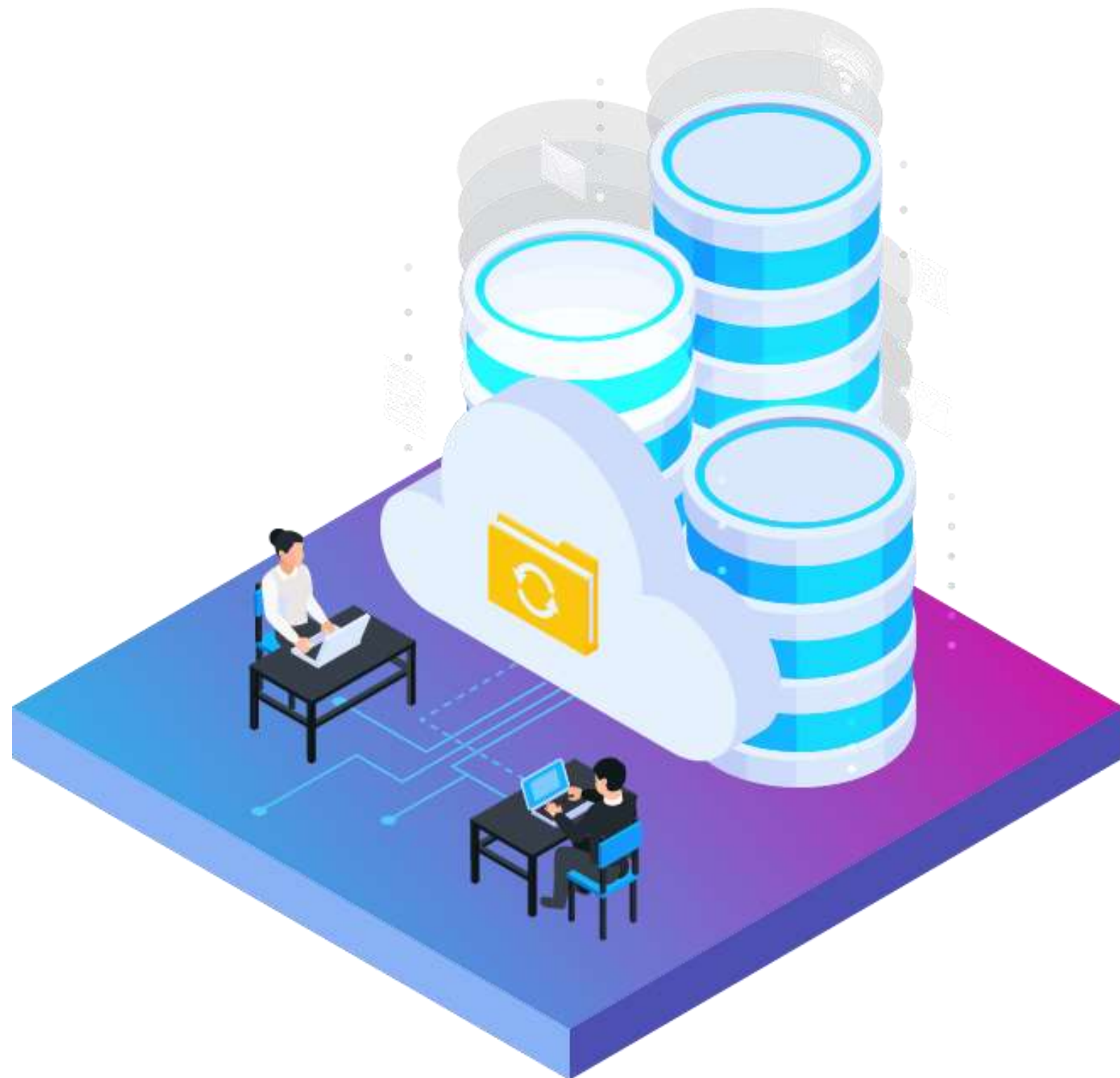


## Cross Platform Compatibility & Deployment

- ❖ Our IETM Frame work is cross platform compatible
- ❖ Code and Pixels Frame works is compatible for multiple devices i.e. Lap tops, PCs, Tablets etc.
- ❖ IETM can be operated in Windows Operating systems and also LINUX OS
- ❖ IETM is a browser-based application
- ❖ No 3rd party tools are required to install IETM in the client machine
- ❖ It can be installed in the Client server Environment and also in a single System /standalone system







- ❖ In Class-IV IETM the data to be stored in a relational database, obtaining benefits of data integrity and removal of data redundancy.
- ❖ As the content (Images, Text, tables, Hyperlinks, Hot spots) is saved in the database, hence content will be loaded in a fraction of a second from the server.
- ❖ Content completely hyperlinked is mapped directly to relations in the database schema.
- ❖ Content will be driven dynamically from the Database based





- ❖ Dynamic data access from Relational database and reduced use of static pages
- ❖ Content data derived in textual, graphical, audio or video formats in a relational database which is composed of logically connected but randomly accessible IETM data elements





**Users**

- ❖ IETM is equipped with User management tools, content management tool, Authoring tools.





- ❖ User Dashboard consist of features like Manage Bookmarks, Manage Annotations , View Activity, Change Password, Enter IETM, Logout.





**Admin**

- ❖ Admin can control the documents access based on user profile. I.e. For Operator user , only manuals related to operator can be given access and for maintainer user only Maintenance related documents can be give access.
- ❖ Admin can see user login history and user Annotations and feedback etc.





**View Activity**

- ❖ View Activity Feature consist of Last login, Created Date and a Table with all the previous login and logout's gets displayed.

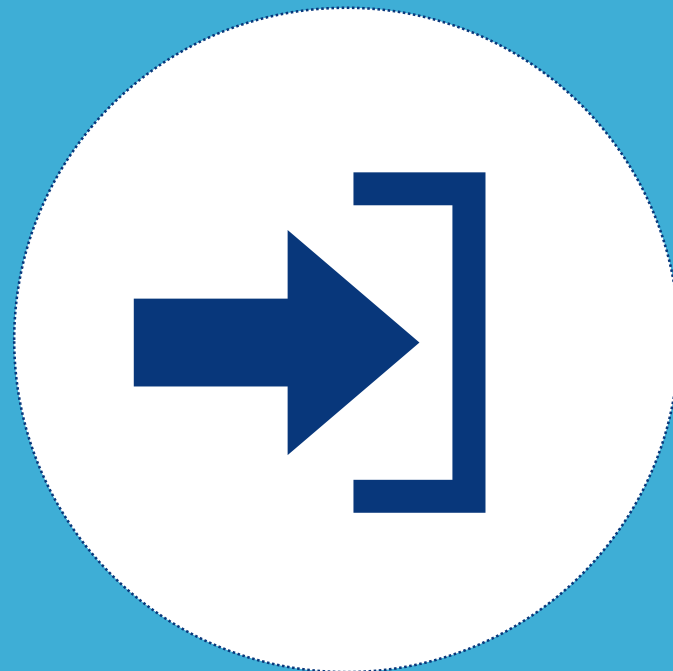




**Change Password**

- ❖ This Feature enables User to change his own password and to update his own security questions.





**Enter IETM**

- ❖ This Feature enables User to enter into IETM Core and access the IETM Data by selecting the desired module.





## IETM Core

- ❖ IETM core consist of IETM Content section on the Right and Tree Menu on the Left for navigation of content, IETM Core consist of Global Search, Local Search, Print, Annotation, Bookmark, Help and Select Module, History Navigation and Home options.





## Annotations

- ❖ Annotations are displayed by an icon at the Top Right beside the Global Search with Annotations Count of particular page. User can select the text with mouse and Add Annotation option appears to users to add new annotation in the content page.





**Print IETM Core**

- ❖ Print feature is provided in IETM Core to print the current page content.





**Bookmark**

- ❖ A Bookmark Icon is provided at the top of content section to bookmark a particular page and can be added by clicking the Bookmark icon, A popup with Name Bookmark name field gets appeared.





## Word Explainer

- ❖ Word explainer feature helps in providing a Description/Explanation to a word by clicking on the word and is highlighted with a color in IETM Content





## Image Explainer

- ❖ Image Explainer feature helps in linking a related image to a word in the IETM content, the word with the image explainer is highlighted with a color in IETM content.





## Video Explainer

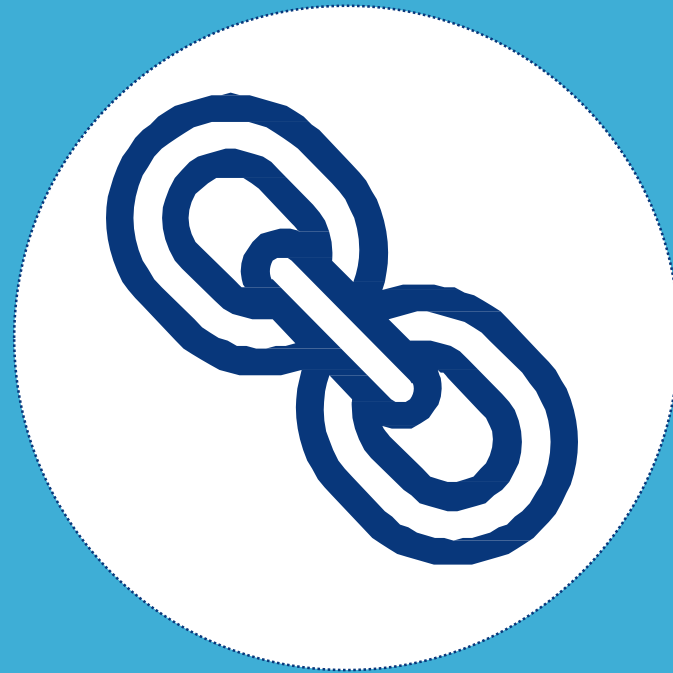
- ❖ Video Explainer feature helps in linking a related Video to a word in the IETM content, the word with the video explainer is highlighted with a color in IETM content.



**Hot Spotting**

- ❖ Hot Spotting functionality is used to link a word to respective image/Drawing of the same page, works with mouse hovering or selecting text or part of a image by which respective drawing or image will highlighted.





## Hyperlinking

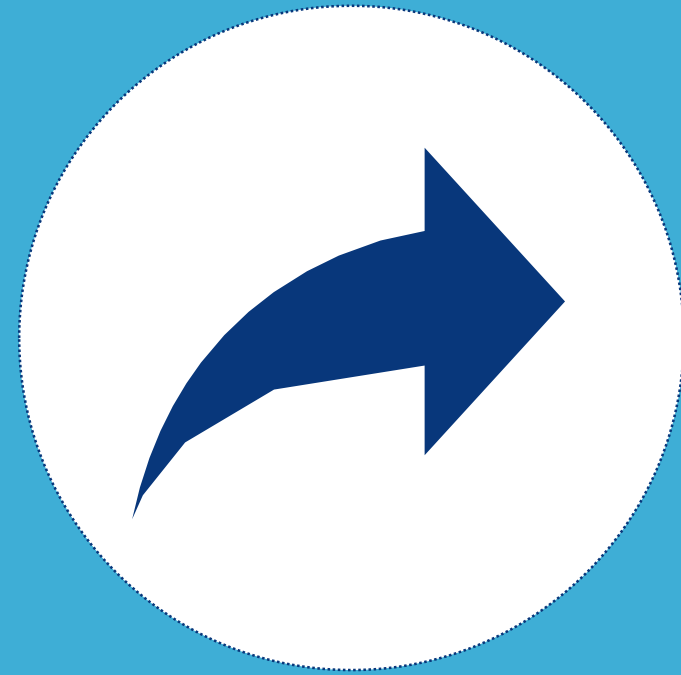
- ❖ Hyperlinking feature enables user to navigate from one page to the other related hyperlinked page by mouse click, the hyperlinked data is highlighted with a color and underlined.



## Image Viewer

- ❖ By clicking on image or enlarge icon of the image at the right bottom of image respective image is displayed in a popup of image viewer.





## History Navigation

- ❖ This feature enables the user to navigate to his previous steps based on his navigation history of the current session, by clicking on the right arrow in the top header user gets navigated to the forward.



## Global Search

- ❖ Global Search provides a functionality to search a keyword with matching page name and also content text from entire IETM Core and the results are displayed in tabular format with Page Title and Module Name. by clicking page title user gets navigated to that page.





## Local Search

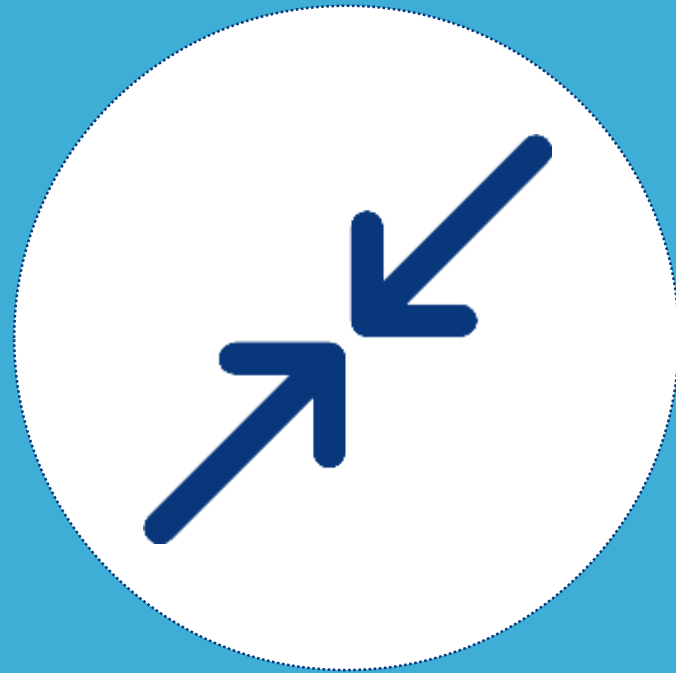
- ❖ Local Search provides a functionality to search a keyword in the same page and the matching text is highlighted with a color in that single page.



## Related Content

- ❖ Related Content features is located at the right bottom of IETM content section. We can link the Related Pages of IETM Core, Document and Drawings which are related to this page content in this feature.





## Page Expand View

- ❖ IETM Page can be expanded upon clicking the arrow button provided at the bottom of the tree menu section.



## Manuals Tab

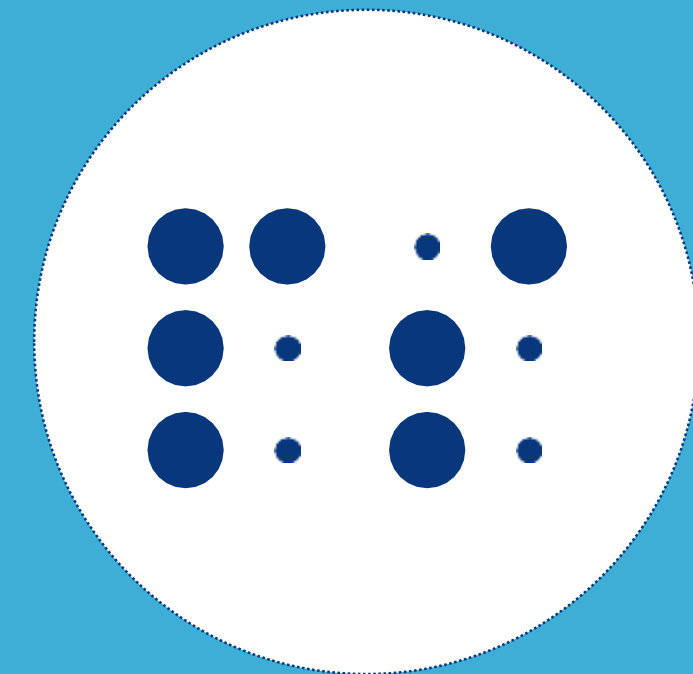
- ❖ Manuals tab is provided in the header above the tree menu. All the manuals related to can be placed in this tab and can be viewed with the help of pdf viewer provided in the IETM application.





## Logs Tab

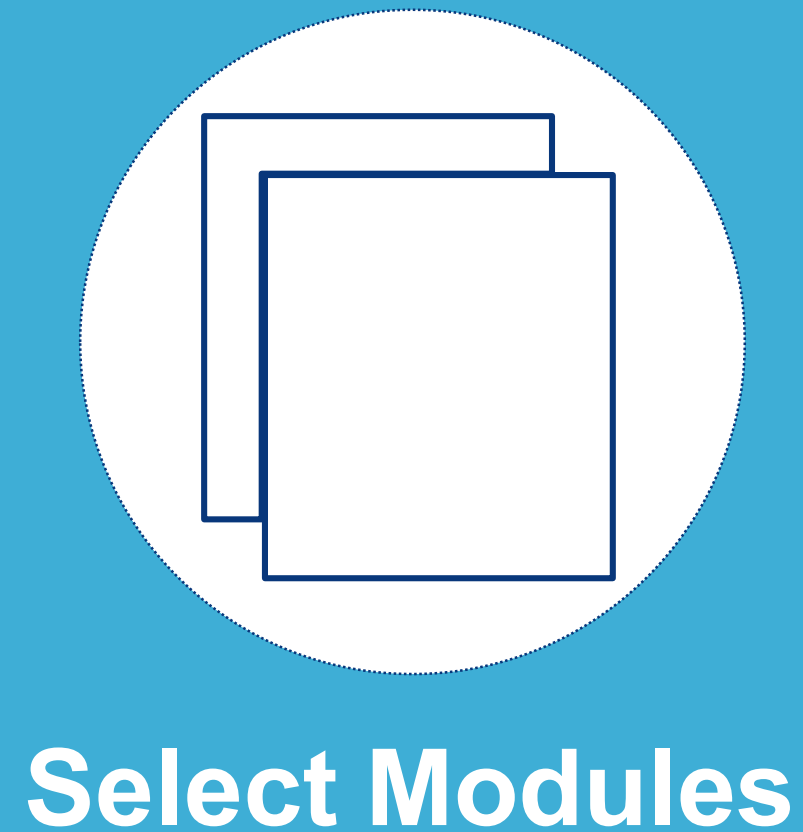
- ❖ Logs tab is provided in the header above the tree menu. This section enables User to add and store the logs of required data for the user



## Glossary Tab

- ❖ Glossary tab consist of Add, Sort , Find options with a tabular display of the glossary Related to content in IETM Core.





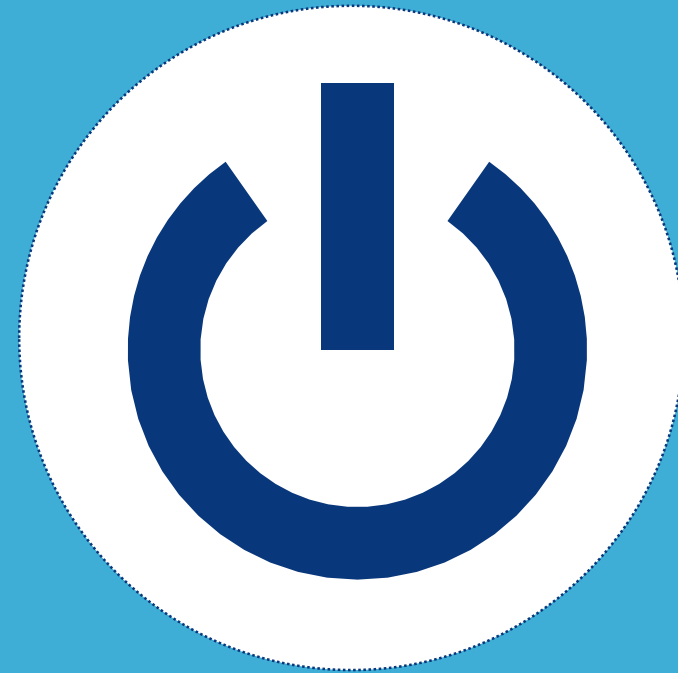
- ❖ User can be navigated to desired module form this Select Module Button, A list of all available modules will be displayed in dropdown.



**Help for IETM**

- ❖ This consist of two pages About IETM and How to use IETM with the information related to IETM and a video how to use IETM.





**Logout**

- ❖ Logout enables the User to close his session and logout from the IETM dashboard and redirects out of application from his access to login page of IETM.

## Level -3

- ❖ is Hardcoded HTML programming.
- ❖ It needs HTML expertise to edit in future, after delivery.



## Level -4

- ❖ has an Inbuilt Authoring tool
- ❖ Anyone with little training can edit and update the content after delivery.
- ❖ If the Authoring tool is given to the client, the client can also update.

**Still, 10 % OEMs are asking for Level -3. They were awarded the contract in the 2016- 18 period**



## ? What is the difference between IETM level -3 and Level -4?

S. No	Feature	Description -IETM -3	Description -IETM -4
1	Password Protection	Yes	Yes
2	Login Password	Yes. But common for all.	Yes. Different for all. Maintainer, Operator, Admin, Super Admin(Developer mode)
3	User access	All the contents will be visible to all the users. No control over access rights to specific users.	Based on login credentials, we can restrict users. I.e. Operator will be able to see only contents and PDFs and Drawings related to operator only.
4	Admin	NO. Only single log in for all users.	Yes. Admin can create and manage users and content access rights.
5	Super admin/Authoring tool	No	Yes. Client can update the content. Using Super admin or Authoring tool, IETM can be edited. Text, images, Content tree, hyperlinks can be done using Authoring tool.
6	Database	No data base. Documents will be stored as HTML	SQL – Complete text and user information, Content structure will be stored in SQL database
7	Dash board	No	User Dash Board to manage user activities. Admin Dash Board to manage admin activities.
8	Nature of content	Static	Dynamic. Complete data is stored in the database.
9	Interactivity	Less	More
10	Bookmark, Annotations	No	Yes. User wise bookmarks and annotations.



## What is the difference between IETM level -3 and Level -4?

S. No	Feature	Description -IETM -3	Description -IETM -4
11	Glossary	Yes	Yes
12	Search	Local Search	Local and global search(Full IETM search).
13	Delivery & Execution	CD and DVD or USB	Installation. Can't be played from DVD/USB. Need client server environment.
14	Dependent software's to play	No	NO. IETM has inbuilt image and video players, PDF viewers, hence no 3 <sup>rd</sup> part installations are required at client side.
15	Operating systems	Linux	Windows and Linux. IETM can be browser based or EXE based.
16	User activity monitoring	No	Yes. User log in history will be tracked.
17	Hyperlinks	Yes , Hardcoded	Dynamic. Each frame, Images or topic will be given a unique code.
18	Hotspots (A pop up window having image, Video and Text plainer)	Yes , Hardcoded	Dynamic
19	Contents Tree Structure	Yes	Yes
20	When to use	When page count is up to 5000	Anywhere from 5000 to 2 lakhs.
21	Specifications	JSG 0852:2001 Joint service Guide	JSG 0852:2001 Joint service Guide MIL Standards - 87268, 87269 (DATABASE)
22	Print	No	Admin can print the required files.
23	Content	Page based approach. HTML pages are developed and integrated	Frame based approach. No pages exist. All data will be stored in database. Based on request from user, content will be fletched from server and displayed.



# What Inputs are Needed?

## From OEM to Create IETM



All the softcopies of user manuals to be converted to IETM



All images Videos, and drawings to be integrated into IETM



Table of contents/tree structure.



Subject matter expert to resolve technical clarifications

# What Inputs are Needed?

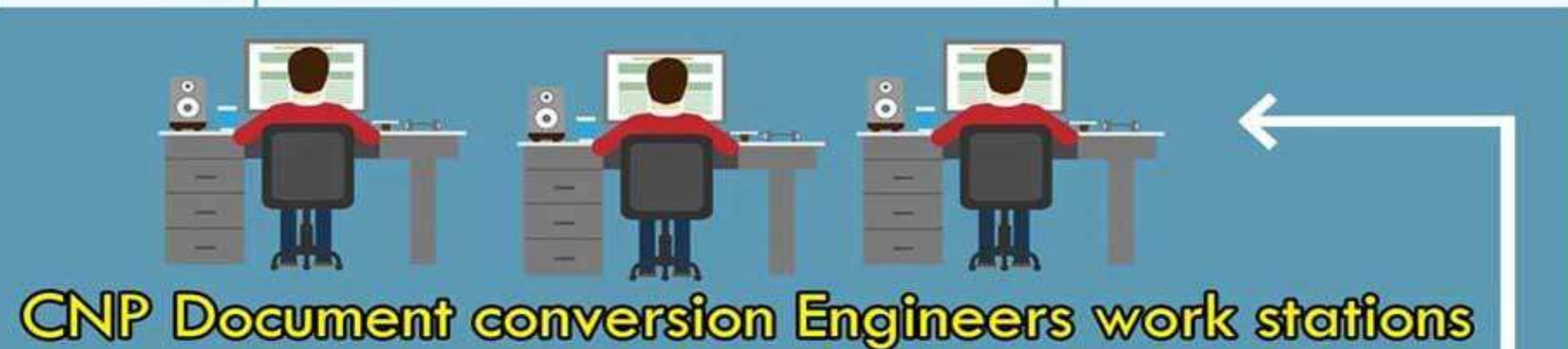


There is no relation between IETM and 3D interactive animations / Blowups and Videos.

If OEM has these multimedia elements like Videos, 3d, 2D animations, Blowups, AR and VR, then IETM can embed these elements as a Library.



## Code and Pixels Premises



All types of legacy documents, Manuals, ISPL, Pictures, Videos

CNP = Code and Pixels

CSDB = Common Source database

CNP CSDB Viewer "CNPV-0852" software will be installed at client server or cloud



or



IETM Administrator





## JSG -0852 :2001





It can be played on  
Windows OS and also in Linux OS



It can be installed in Client Server  
Environment and also in single System



Our IETM Frame work is cross-platform  
compatible



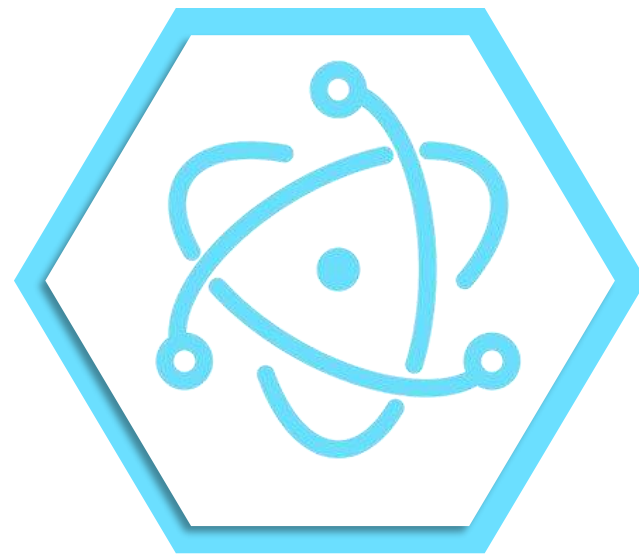
can be played in any Browser

## HTML 5 (responsive) based content integration and module based deployment

### Framework



Angular JS



Electron

### Database



MySQL

### Frontend



HTML5

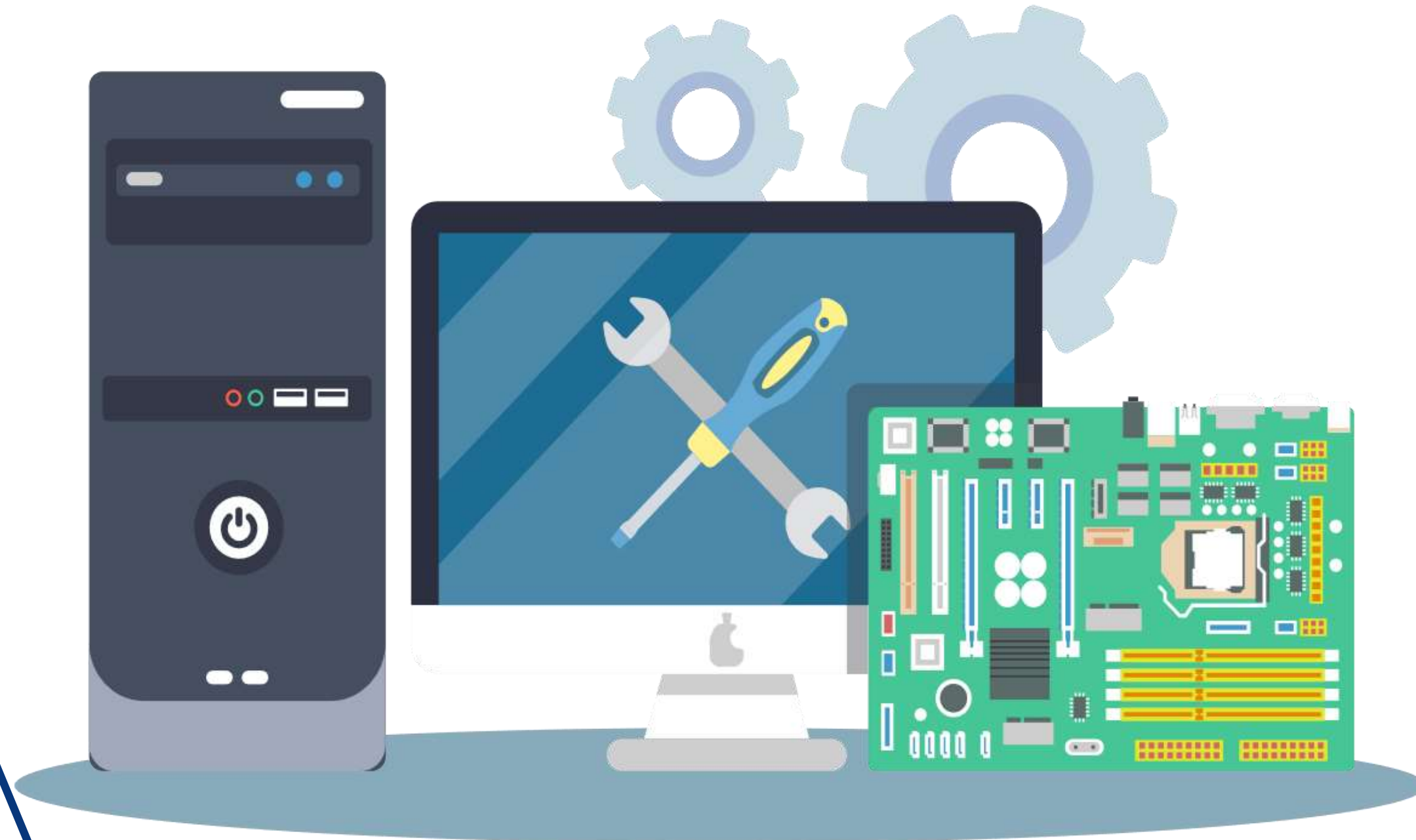


Bootstrap



## Optimal Performance of IETM

- ❖ NO High-end hardware or servers are required to run IETM.



## Optimal Performance of IETM

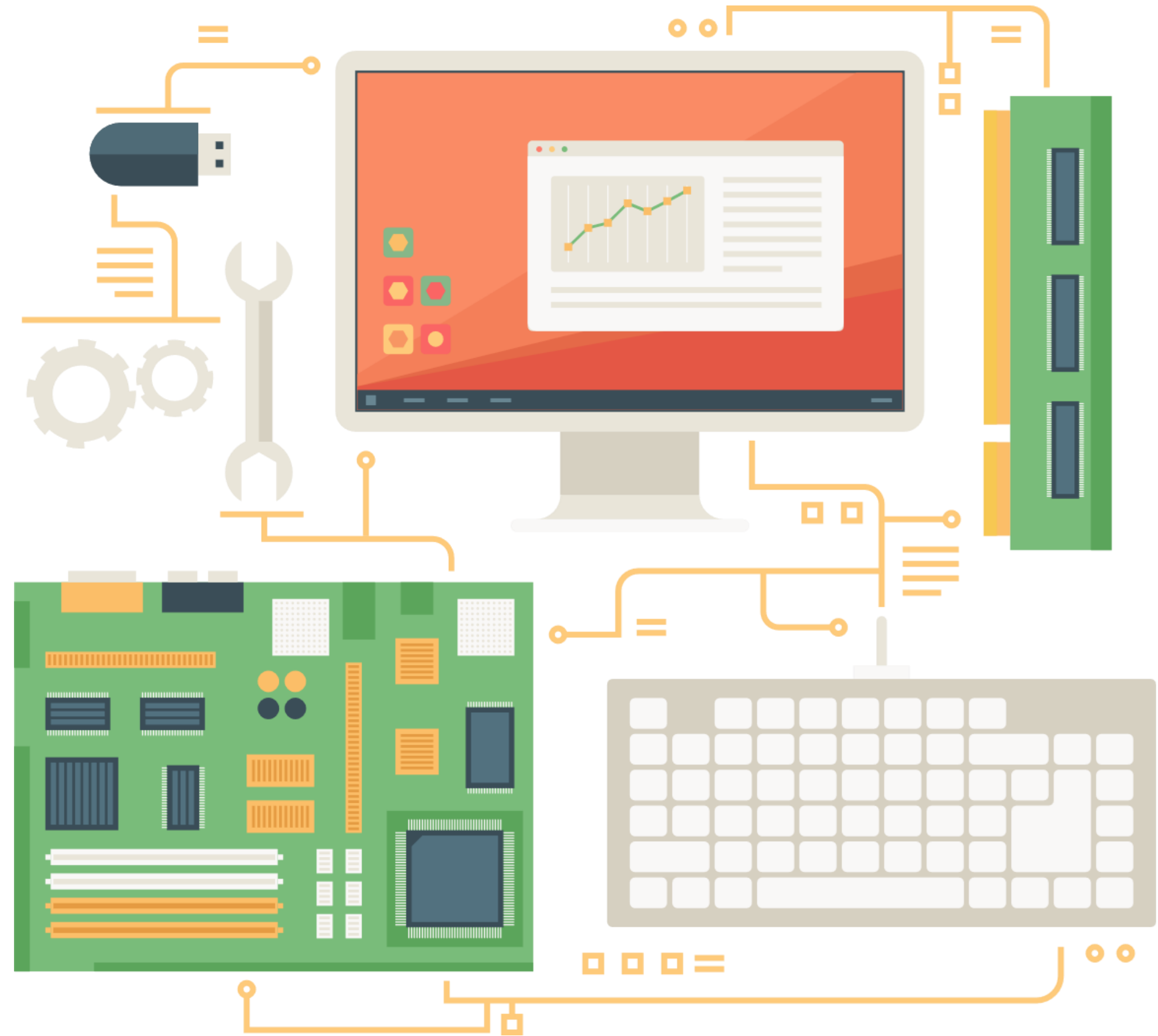
- ❖ NO High-end hardware or servers are required to run IETM.
- ❖ However, if more concurrent users, then a good configuration server with good LAN connectivity must be ensured.



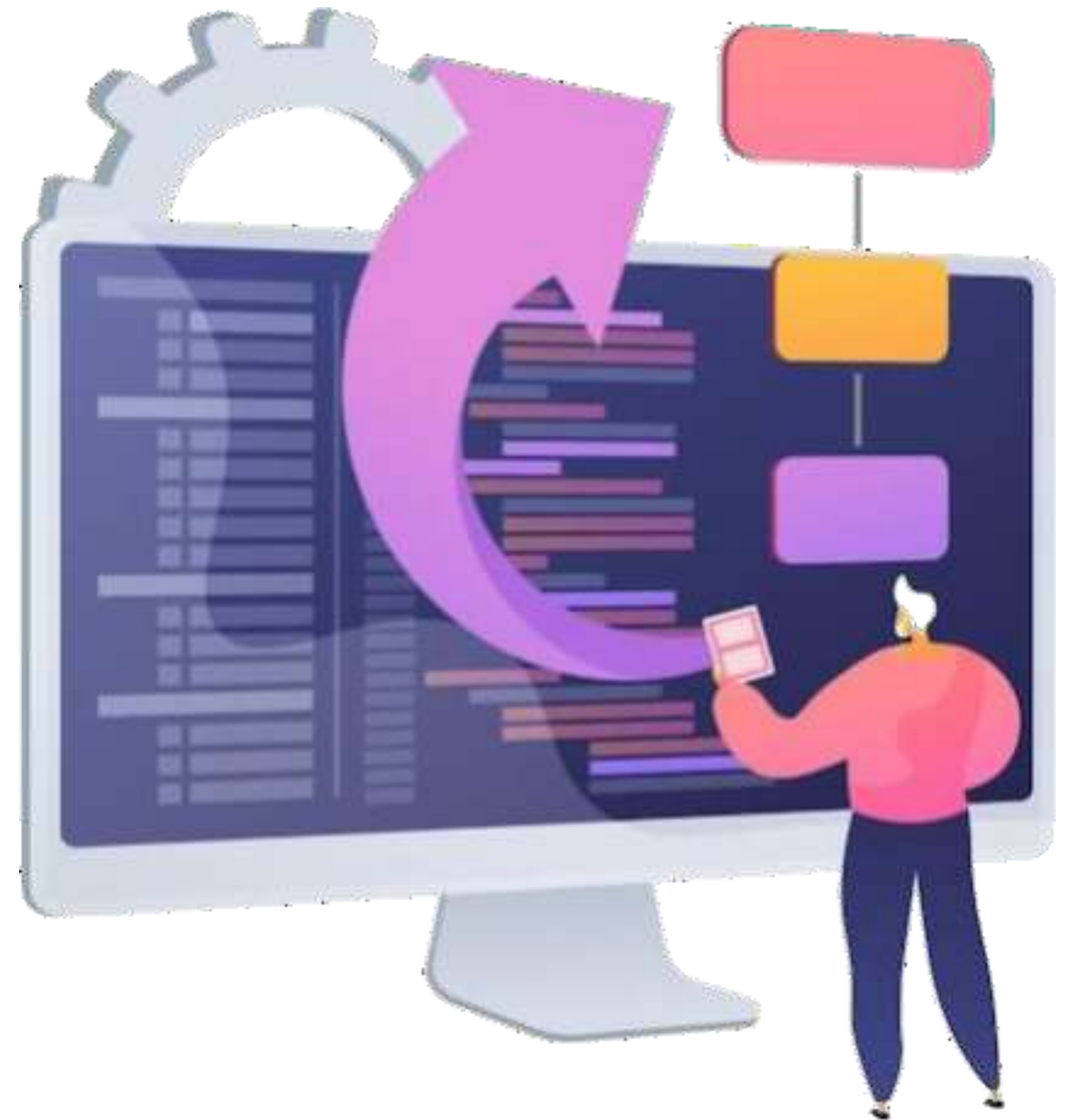


## Optimal Performance of IETM

- ❖ NO High-end hardware or servers are required to run IETM.
- ❖ However, if more concurrent users, then a good configuration server with good LAN connectivity must be ensured.
- ❖ i3 with 8 GB RAM systems is the minimum configuration required for the server or for Node.



- ❖ DB file (Database file, all the manuals are covered in the Database)
- ❖ IETM VIEWER Software to retrieve the content from the database







Level of IETM, is it Level 3 or Level 4



Cost will be based on the number of pages that are to be converted



Vendor calculates cost per page. And a fixed cost of IETM viewer software



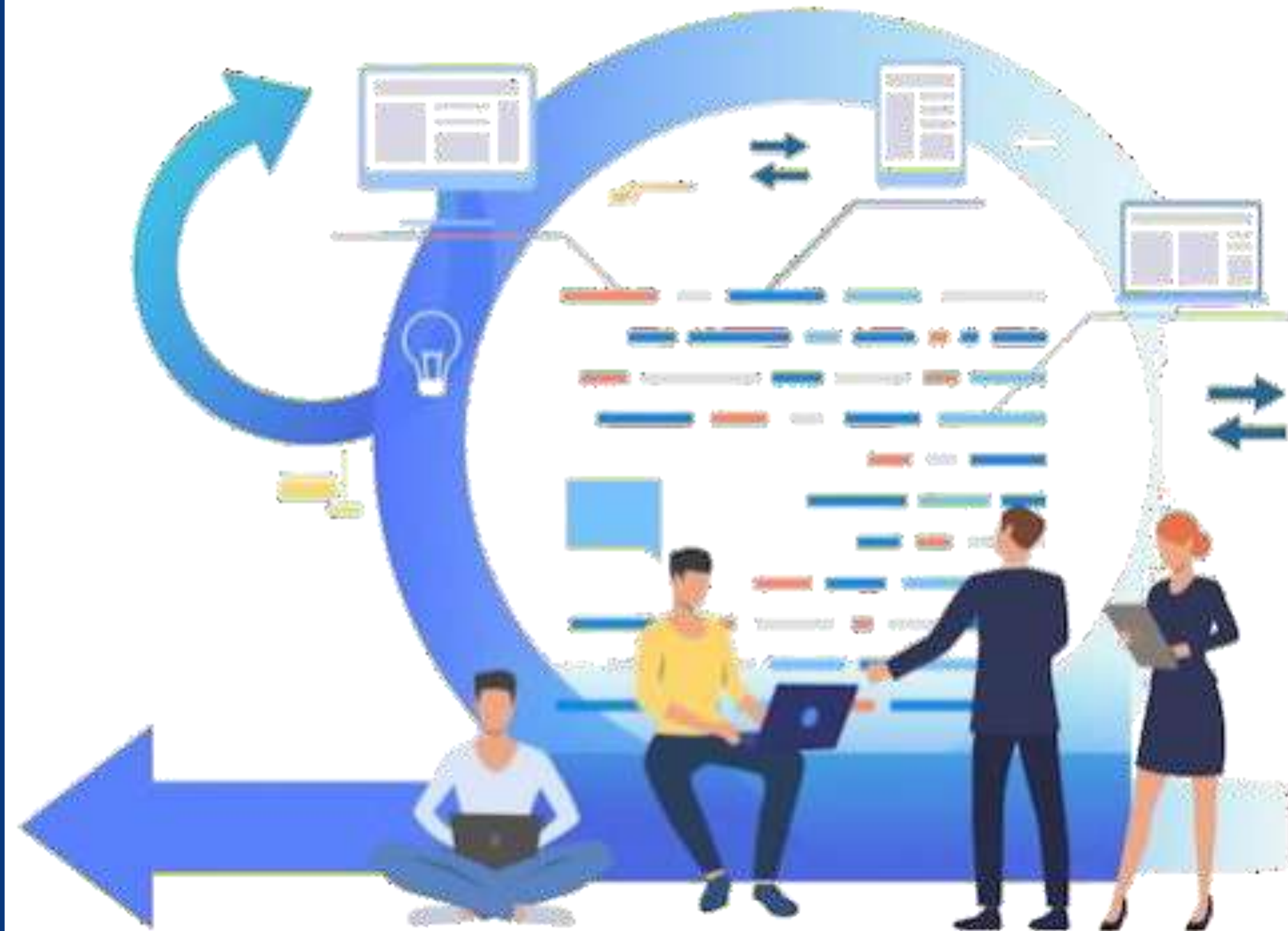
If you want to create IETM by yourself self then you also need to buy IETM authoring software.



## Note:

Level 4 will be almost double the cost of Level 3. If you have a option to select, go for Level 3, which is very economical. In a few Scope documents, the user says we need IETM. They don't specify which level of IETM. In such cases opt for Level -3.

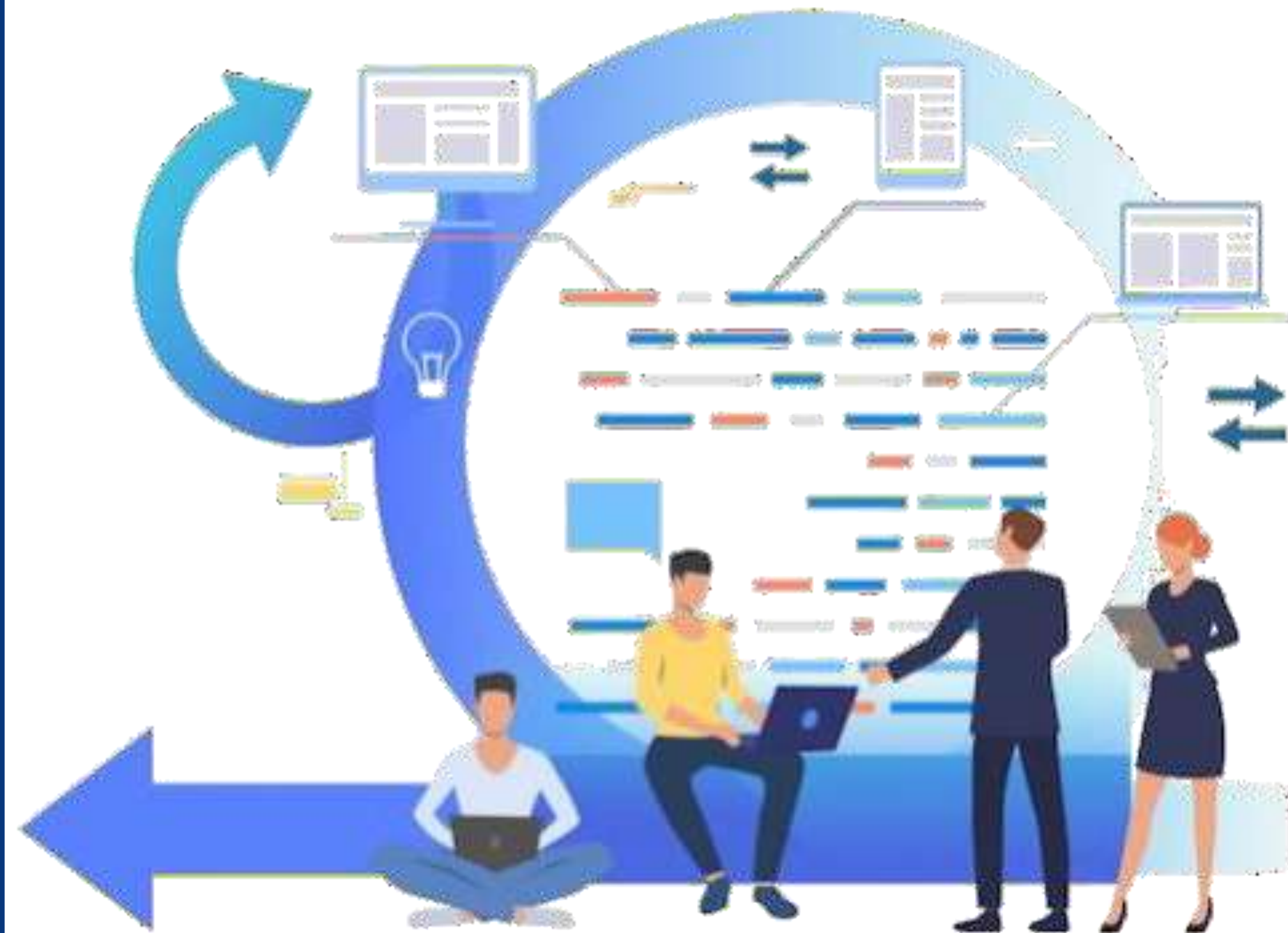
- ❖ There is a misconception **about IETM**. As the name indicates interactive, people assume that it is a **3D based on blowup software**. Interactive means, users can browse or cross-refer or interact with the software to search on a particular topic/sub-topic.
- ❖ **3D Animations** and **blowups** can be taken as separate tasks based on the complexity of the system and the level of blowups that you want. We have a separate division to take up such assignments.
- ❖ If your SCOPE /SOTR /RFP says **IETM** then stick to **IETM** only.



**IETM Vs 3D Blowups**



- ❖ These 3D animations, 3d Blowups and virtual reality cost more than IETM cost. They will be good to see definitely but they are not part of IETM. If your client wants 3d and if the scope specifically mentions 3d then it is a separate deliverable but not IETM.
- ❖ There is no link between IETM and 3d. If you have 3d animations or blowups, you can integrate into IETM.
- ❖ Understand the difference between IETM VS CBT vs. virtual reality.



**IETM Vs 3D Blowups**

- ❖ Another important point to check is which **IETM level** the client/ SCOPE is asking for. Generally, they may **ask for Level 3 or Level 4**. (If your RFQ is 5 years old around 2016-19 then they may ask for Level 2 or 3)
- ❖ Level -3 costs less price than Level -4. If you have a choice to select, then select IETM -3 as it is very economical.
- ❖ The latest RFPs / SCOPE asks for Level -4 only.



**IETM Vs 3D Blowups**





- **EED-S-048**
- **DME 452**
- **NCD 1470**
- **JSS 0251-01:2015 (Rev no. 2)**
- **JSG 0852: 2001 Reaffirmed 2019**

- ❖ You may see these standards in your scope.
- ❖ The end users say that IETM has to be developed based on these standards.
- ❖ Out of these standards, JSG 0852 is the only standard that talks about IETM.
- ❖ Other standards are documentation standards.



## EED-S-048

Naval Standard Specification

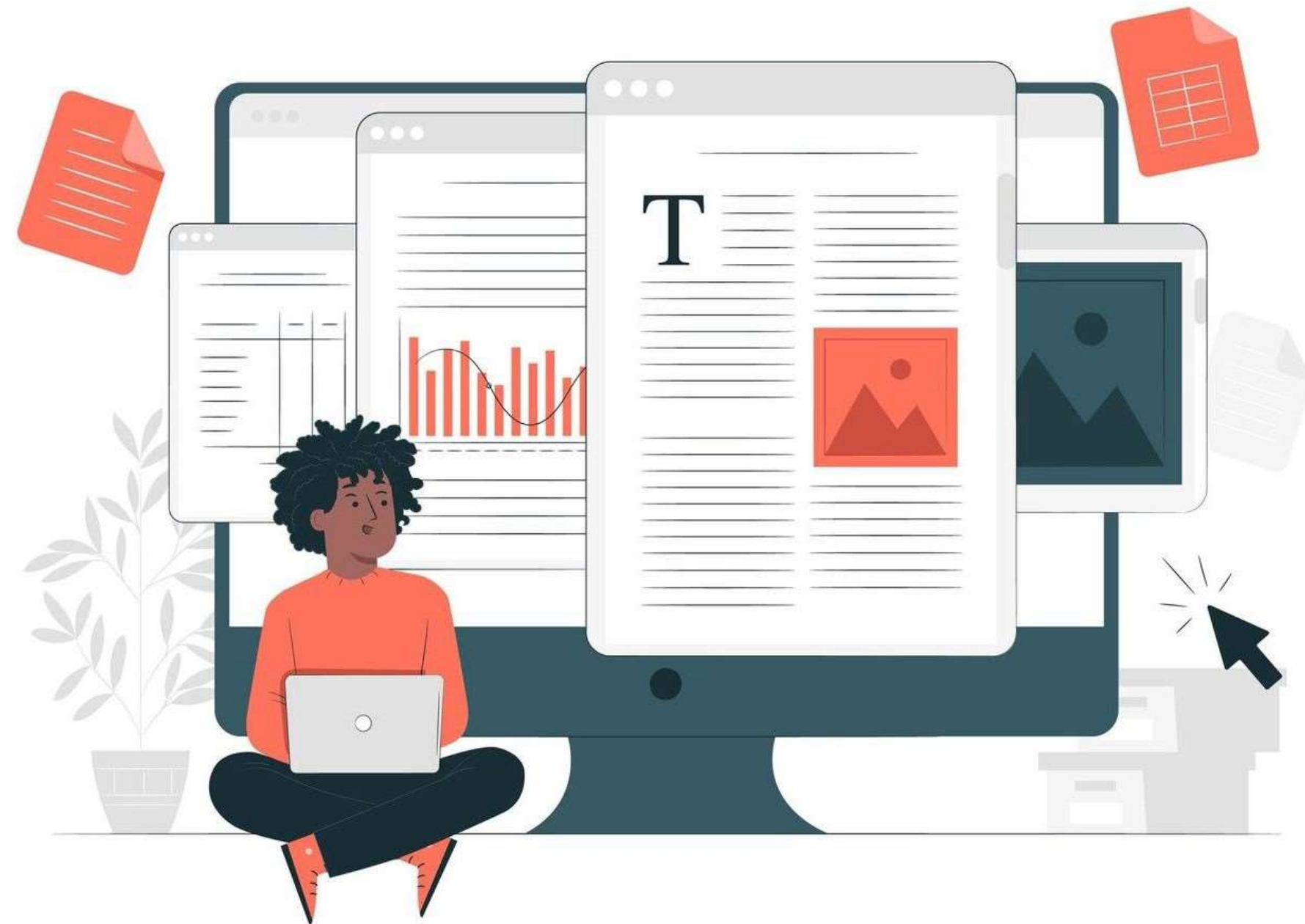


Specification of Documentation for New Construction Ships.





DME is a part of the Materiel Branch and works under the overall command and control of the Chief of Materiel, as PSO, and Assistant Chief of Materiel (Dockyard & Refits) as APSO.



## DME -452

Directorate of Marine Engineering  
(DME)



## Documentation Specifications

# NCD 1470

DIRECTOR OF  
STANDARDISATION

भारत सरकार  
GOVERNMENT OF INDIA

रक्षा मंत्रालय  
MINISTRY OF DEFENCE



मानकीकरण निदेशालय

DIRECTORATE OF STANDARDISATION

Department of Defence Production

## Department of Defence Production Requirements For Preparation of Documentation For

- ❖ Equipment
- ❖ Material
- ❖ Structure
- ❖ System





## Procedure for

- ❖ Preparation & Production of Technical Publications
- ❖ For Electronic and Electrical Equipment



# JSS 0251-01: 2015 (Rev no. 2)

## JOINT SERVICES SPECIFICATION (JSS)

भारत सरकार  
GOVERNMENT OF INDIA

रक्षा मंत्रालय  
MINISTRY OF DEFENCE



मानकीकरण निदेशालय  
DIRECTORATE OF STANDARDISATION  
Department of Defence Production

# JSG 0852

## Joint Services Guide (JSG)

भारत सरकार  
GOVERNMENT OF INDIA

रक्षा मंत्रालय  
MINISTRY OF DEFENCE



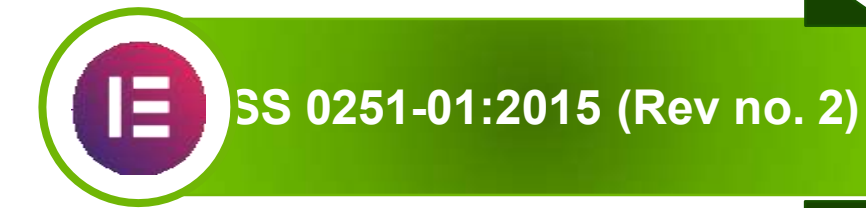
मानकीकरण निदेशालय  
DIRECTORATE OF STANDARDISATION  
Department of Defence Production

Indian Defence standard to make IETM





ONLY JSG 0852 is related to IETM all other standards talk about how to prepare documentation for ships



## EED-S-048 | DME 452 | NCD 1470

Standards defined by the Navy guiding OEMs

Purely Technical  
Stuff and only  
Defence Scientists  
or Technical Teams  
of OEMs

- ❖ Who were involved in the **development of equipment / devices** can prepare.
- ❖ They need **domain expertise**.
- ❖ These are **absolutely in no way relevant to IETM development**.





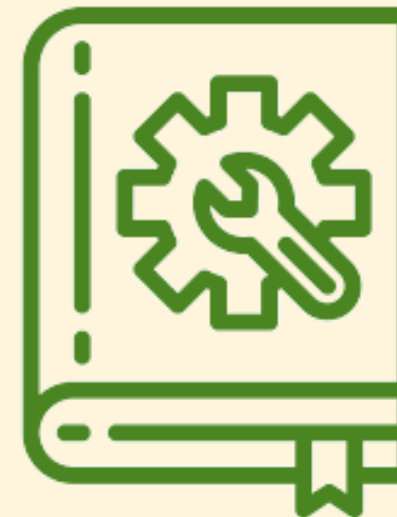
- ❖ By adhering to **EED-S-048** or **DME 452** or **NCD 1470** these standards your technical team will make manuals i.e.



User Handbooks



Technical Manuals



Maintenance Manuals



MRLS



Content may be written poorly formatted by the Domain Experts as

- ❖ Aesthetically Arranging
- ❖ Making a Table of Contents
- ❖ Header
- ❖ Footers etc.

It is not the work of **Technical People.**



- ❖ Once this content is written by the experts the documentation team will come to the picture.
- ❖ These documents are re-arranged and re-formatted as per JSS – 0251 standards.
- ❖ Once the documents are approved by the authority, then next stage is IETM.



(step 1&2 is done by **OEM** and Step 3 is executed by the **IETM Software Vendor**)

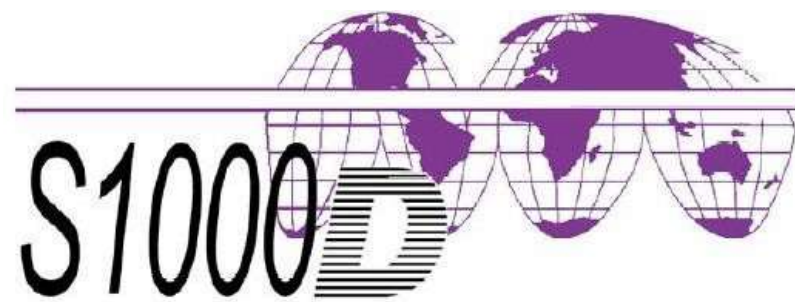
<b>STEP 1 (Content writing)</b>	<b>Writing content/ preparing the manual based on the standards (EED-S-048, DME 452 OR NCD 1470.)</b>
<b>STEP -2 Standardising/ formatting the content</b>	<b>Converting the raw content into a proper technical document using JSS standard.</b>
<b>STEP -3 Converting the final PDF manuals to IETM</b>	<b>Converting the approved/vetted Manul to the IETM database using the IETM authoring tool / <u>IETM software</u>.</b>



**There are two specifications/standards that exist**



**Joint Service Guide  
JSG 0852: 2001 Reaffirmed 2019**



**S1000D European Standard**

## **NOTE :**

In many Scope documents client simply says, IETM – Level 4. Then it is default that they are looking for Indian Defence standards.

- ❖ S1000D is European standard and it costs 3 times more than the Indian standard.
- ❖ Do not opt or agree to S1000D until and unless it is specifically mentioned in your scope/SOTR document.
- ❖ S1000D is a complex version, and even the end users also do not know anything about S1000d.
- ❖ S1000D needs CSDB studio and it is very costly, maybe in crores.
- ❖ S1000D is XML-based, hence few vendors are just giving XML-based S1000d IETMs. A lot of complexity is involved in the S1000D, Don't get into that as no one knows what the original S1000D looked like.





**FREQUENTLY**

**ASKED**

**QUESTIONS**



**We are OEMs and serving Indian navy. Our client wants us to deliver IETM along with the Machinery/System/Vehicle/Equipment. What inputs should I take from my client? We have no knowledge about IETM. We are supplying all the manuals in PDF format and hard copies. Why navy needs IETM?**

- ❖ From 2018, all Defense/Navy/Air Force clients are asking for IETM along with other training Aids such as CBT, Video Film, Charts and Boards, and Technical literature Hardcopies.
- ❖ Based on the complexity of your Machinery/System/Vehicle/Equipment, you will need to provide different types of manuals as deliverables. (User handbook, Design specifications, Technical manuals, and Illustrated spare parts list)
- ❖ Manufacture recommended list of spares, DIM, SMT & STE, ISG, MS, PRS, Inventory, Deployment manuals, Combat manuals, Operating manuals, Maintenance manuals and many more as per your system. The count of all together may range from 5000 to 25,000 for big systems.
- ❖ If the user has to refer to a topic, then she/he has to refer to all 10-15 manuals hard copies or soft copies (PDFs) separately. It's a time-consuming and troublesome process and also not completely resourceful.
- ❖ For example, if a user wants to search for some particular LRU (line replaceable unit) then he has to open each and every PDF and search for the LRU. He will get many results and it will be hard to refer to all the 16 PDFs at a time. Sometimes, he may have to refer to 2-4 manuals together for a solution. In this case, a traditional PDF file or Hard copy will have many limitations.
- ❖ To overcome the limitations, IETMs are designed.
- ❖ IETM basically combines all these manuals and creates interactivity between all the manuals and drawings etc. That's the reason it's called the Interactive Electronic Training Manual.
- ❖ In IETM, all the manuals and drawings, images, and videos will interact with each other through hyperlinks, hot spots cross-references etc. Thus, searching for topics is made possible in a single click with 100% efficient results.
- ❖ Ask your client whether they want IETM Level 3 or Level 4. And count how many pages of text they have.
- ❖ Price varies based on the number of pages and the Level of IETM. Level 3 is less expensive than Level 4





## What is the deliverable format of IETM manual? PDF or HTML or DOC?

- ❖ Though the name reads Electronic Training Manual, it is not a single file or Manual. IETM is a software package.
- ❖ A software where all the pages of manuals are converted and embedded in IETM framework or IETM software.
- ❖ IETM is a software where all your manuals sit.



## I want exploded view of our machine in IETM.

- ❖ If you have any Videos or Images already made, then we will put exploded views in IETM. The IETM vendor's responsibility is to embed all inputs provided by OEM into the IETM framework.
- ❖ The IETM scope does not cover the designing of Charts, Blowups, Exploded Views, Animations etc.
- ❖ If you want exploded views, then that will be taken as a content development activity.



## What inputs you need to make IETM?

- ❖ May it be IETM level -3 or LEVEL -4, we need all the manuals which are to be converted (either into PDF or Word format), all the images (JPEG, PNG, TIF) and all the CAD drawings converted in PDFs and Videos that are to be embedded into IETM.
- ❖ We need table of content/content classification done by your subject matter experts.
- ❖ We also need your subject matter expert's help in connecting documents and also giving hyperlinks, related topics, glossary etc.





## How many days will it take to develop IETM?

- ❖ It depends on the number of pages to be converted. We have done almost 50 IETMs of various levels. As per our experience to make Level 3 IETM having 5000 pages, it takes around 30 days.
- ❖ For documents 10,000 to 20,000 it takes around 90 – 120 days.
- ❖ Major hindrance that we face is the availability of final documents from OEM.
- ❖ We had this experience several times that OEMs have to collect documents from many sources and a number of versions are available for each document. OEMs usually focus on actual equipment but not on documentation of equipment. Collecting final approved files from OEM is the biggest challenge in IETM development. If all the final approved documents are in place, it takes standard time as mentioned above.



## What will be our /OEM role?

- ❖ You need to nominate a person as a Point of Contact from your end. Our technical team will be in constant touch with the POC to take approval on UI and UX (User interface and user experience), i.e. the logos to be used, color formats, table of content finalizing and cross checking of IETM etc.



## My client wanted IETM in DVD.

- ❖ Probably, your client must be looking for IETM level -3. IETM level -3 only can be played from CD/DVD player. IETM -4 requires installation as it uses a Database.





## When do we need IETM -3 and IETM -4?

- ❖ It depends on your client's requirements. General practice is, IETM level 3 is used when documents are less, i.e. below 2000. When documents are more, IETM -4 is required.
- ❖ Having said that, we have also done 2000 Pages of IETM Level 4 and 6000 pages of Level 3.
- ❖ It completely depends on the Client. If your system is small, you can convince them to go for IETM level -3
- ❖ Cost wise, Level 3 is economic than Level 4



## I find very few IETM vendors and how different are you from others?







- ❖ We are the only company in Hyderabad having experience of delivering 30 + IETMs in past 5 years.
- ❖ We worked closely In associated with all the Defense Labs and we are fully aware of their requirements as almost 30 IETMs are being used by various Army or Naval, Air Force headquarters and training centers and Army Air Defense Colleges etc.
- ❖ You ask for Purchase Orders from other vendors. Majority of vendors don't have POs from clients.
- ❖ Many vendors don't have IETM software with them to showcase demos.
- ❖ We are available any day to give a demonstration on IETM level 3 or 4
- ❖ IETM is a combination of software and data conversion. We have the strength of 50 + software and content development professionals and we guarantee delivery date as we have experienced resources having dealt with 30 project life cycles.
- ❖ We have a strong R&D team, which exclusively works on improving software as per the latest technologies. The majority.






# Sample Level -4 Screens








USERNAME : GK


ROLE : OPERATOR


 ENTER IETM


 MANAGE BOOKMARKS

 MANAGE ANNOTATIONS

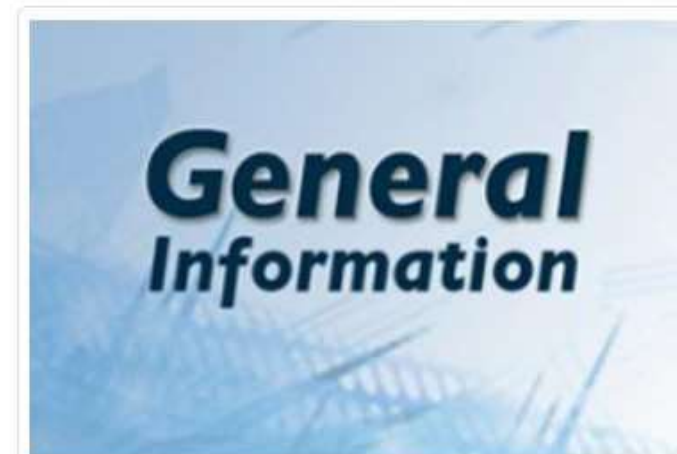
 MANAGE USER ACTIVITY

 SECURITY QUESTIONS

 CHANGE PASSWORD

 LOGOUT





GENERAL INFORMATION



OVERVIEW OF RADAR



TROUBLE SHOOTING



RADAR BASICS

🏠 ← → 📺 ? Radar Basics A ▾ ✂ 🔖 🔍 🔌

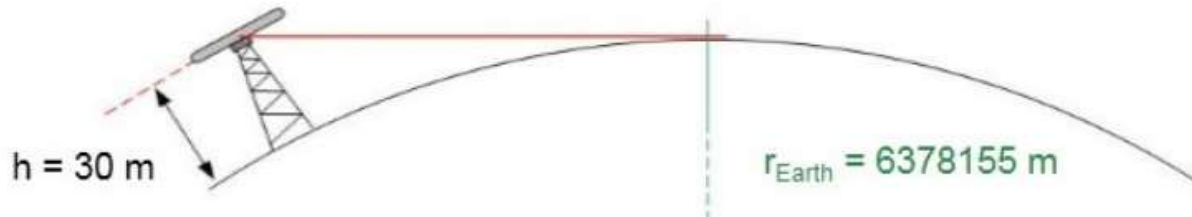
IETM Content
Manuals
Drawings
Glossary
Inventory
Logs
Bookmarks

📖 0
💬 0

### Radar Basics

- Basics 1
- Basics 2
- Basics 3
- Basics 4
  - Horizons
    - Geometric Horizon
    - Radar Horizon
    - Geometric Horizon and Radar Horizon
    - Dead Zone and beyond the Horizon
  - Range
    - Slant Range
    - Atmosphere
    - Anomalous Propagation
    - Reflections
    - Simulation Software
  - References

## Geometric horizon



$$\text{Horizon}_{\text{geometric}} = (2 \times h \times r_{\text{Earth}})^{0.5} [\text{m}]$$

$$\text{Horizon}_{\text{geometric}} = (2 \times 30 \times 6378155)^{0.5}$$

$$\text{Horizon}_{\text{geometric}} = 19.56 \text{ km} / 10.56 \text{ NM}$$

or...

$$\text{Horizon}_{\text{geometric}} = 3.57 \times h^{0.5} [\text{km}]$$

$$\text{Horizon}_{\text{geometric}} = 1.93 \times h^{0.5} [\text{NM}]$$

Knowing the height of the antenna and the radius of the earth, it is possible to calculate the geometric horizon, which is a straight line from the antenna to where the line hit the curvature of the earth.

The squareroot of (2 x antenna height x radius of the earth) gives a horizon of 19.56 km (10.56 NM). The equatorial radius is used – using the polar radius (6356.8 km) the horizon is 40 m shorter which is more or less the same.

As a radar beam bends towards the earth when it enters the atmosphere, the horizon is increased and therefore it is necessary to distinguish between a geometric horizon and a radar horizon

Prev
Next

Radar Basics > IETM Content > Basics 4 > Horizons > Geometric Horizon









View User Activity



From Date: 01-Jun-2021

To Date: 11-Jun-2021



All

Show 10 entries

Find: By: Page Name, User

#	User with Employee ID	Activity	Created Date
1	Name: gk Employee ID: (120)	Action: Document was accessed. Page Title: Geometric Horizon	Jun 11th 2021, 02:30 pm
2	Name: gk Employee ID: (120)	Action: Document was accessed. Page Title: Basics 1	Jun 11th 2021, 02:29 pm
3	Name: gk Employee ID: (120)	Action: Inventory item 'Bhargav' was consumed. Quantity: 5 Remarks: bhtg	Jun 11th 2021, 10:32 am
4	Name: gk Employee ID: (120)	Action: Document was accessed. Page Title: Warning and Safety	Jun 11th 2021, 10:32 am
5	Name: gk Employee ID: (120)	Action: Inventory item 'Bhargav' was consumed. Quantity: 3 Remarks: bh	Jun 11th 2021, 10:31 am
6	Name: gk Employee ID: (120)	Action: Document was accessed. Page Title: Warning and Safety	Jun 11th 2021, 10:31 am
7	Name: gk Employee ID: (120)	Action: Document was accessed. Page Title: PD, PFA, S/N ratio	Jun 11th 2021, 10:29 am
	Name: gk	Action: Document was accessed	

Showing 1 to 10 of 104 entries

Previous 1 2 3 4 5 ... 11 Next

Manage Annotations

Show

10

entries

Find:

By: Title , Description

Sr. No	Annotated Text	Description	Annotation Type	User	Date & Time
1	range	distance	Notes	user1	Jun 11th 2021, 12:08 pm
2	Target resolution-range	deneme	Notes	Lutfu_Ozcakir	Jun 9th 2021, 05:04 pm
3	damage	aaabbb	Notes	surya_teja_op	Jun 9th 2021, 03:30 pm
4	power	qqew	Notes	user1	Jun 7th 2021, 08:09 pm
5	Only personnel qualified to work with radar antenna installations and qualified to work at heights are allowed to install and perform service on antenna systems.	wrong dic by bhargav--note	Notes	bhargav	Jun 7th 2021, 12:34 pm
6 <input type="checkbox"/>	quantities	FB to admin	Feedback to Administrator	gk	May 27th 2021, 11:11 am
7 <input type="checkbox"/>	RCS	to admin	Feedback to Administrator	gk	May 18th 2021, 05:06 pm

Showing 1 to 7 of 7 entries

Previous

1

Next



Manually

IETM Content

Manually

Drawings

Glossary

Inventory

Logs

Bookmarks

User Manual

Manufacturer's Recommended List of Spares (MRLS)

ISPL

Illustrated Spare Part List (ISPL)

Annexure A - Illustrated Spare Parts Catalogue

0 of 0

-

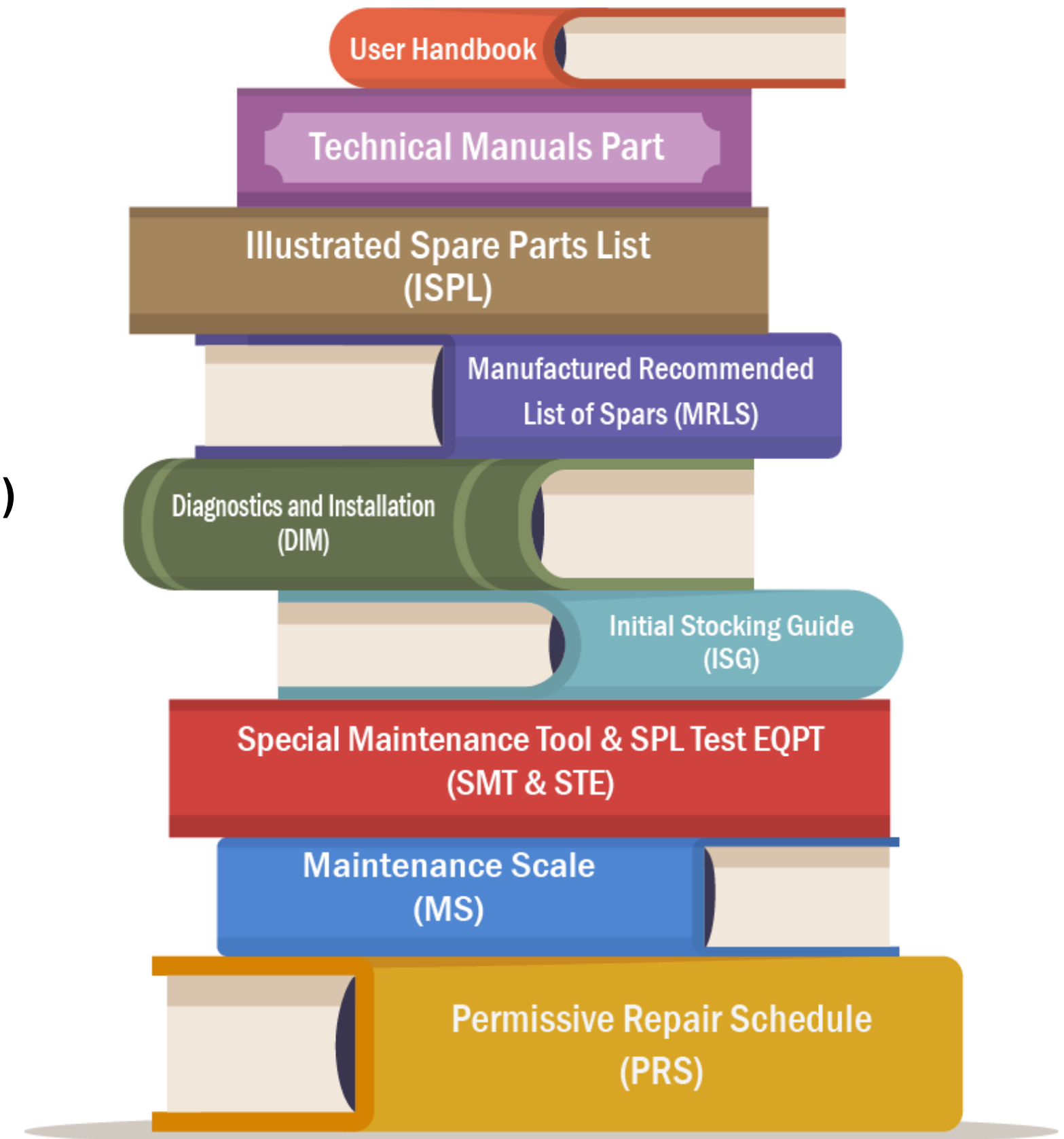
+

Automatic Zoom

Prev

Next

- ❖ **User Handbook (UHB)**
- ❖ **Design Specification (DS)**
- ❖ **Technical Manuals (TM)**
- ❖ **Illustrated Spare Parts List (ISPL)**
- ❖ **Manufactured Recommended List of Spars (MRLS)**
- ❖ **Diagnostics and Installation (DIM)**
- ❖ **Special Maintenance Tool & SPL Test EQPT (SMT & STE)**
- ❖ **Initial Stocking Guide (ISG)**
- ❖ **Maintenance Scale (MS)**
- ❖ **Permissive Repair Schedule (PRS)**
- ❖ **Inventory**
- ❖ **OEM Manuals**
- ❖ **Operating Manuals**
- ❖ **Combat Manuals**
- ❖ **Deployment manuals**
- ❖ **Air Transportation Manuals**





# Want to see the IETM software?

*Until you see the software, you will not be able to understand it fully.  
Hence, we strongly recommend you have a virtual meeting for 15  
minutes so that you will have a fair idea about the IETM software.*

**Write an email to [ietm@codeandpixels.net](mailto:ietm@codeandpixels.net) or call 9849527706 to fix  
up the quick demo on IETM.**



**CODE & PIXELS**  
Values, People, Experience & Technology



# Thank You

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