

# CADEC+ *PraGyan*





# About Mark

Mark Design Solutions Pvt Ltd (Mark) is an Engineering Design Solutions and Consulting company based out of Pune, India. Established in the year 2002, and started implementing 3D CAD technology and customization. Mark has created direct impact to several organisations by exponentially increasing design efficiencies through 3D CAD solutions and customization.

Mark has successfully implemented 3D CAD solutions for 400+ clients. A wide expertise in implementation and customization of 3D CAD across varied industries like AUTOMOTIVE, CONSTRUCTION, HYDRAULICS, PROCESS, OIL & GAS, POWER, ELECTRICAL & ELECTRONICS, MEDICAL, MATERIAL HANDLING, PROJECT CONSULTANCY, ROBOTICS etc.

Mark created tools and techniques to leverage engineering knowledge in growing client business. Then, around 2008, We saw growing need for automation of design activities, Mark invented geometry configurator software – CADEC+.

We are happy to share that our configurator technology received clever and passionate buyers and users. We enjoyed technical and commercial satisfaction in developing and implementing solutions.

Mark implemented SolidWorks PDM in many organizations. Then, we realised that customer need customization of PDM and its integration with enterprise systems. so, we developed our PDM tool - PRAGYAN.

Mark is a Knowledge Based Engineering company, which is certified Gold Partner of SolidWorks. We are proud to say that SolidWorks has chosen us as their Gold Solutions Partner to develop modules that are now certified and integrated with SolidWorks. Only three companies worldwide in the field of Knowledge Based Engineering have earned

this privilege and we are the only Indian company to have this honour. The product that earned us this honour – CADEC+ – seamlessly integrates with SolidWorks and has reseller in international and domestic markets.

Mark is also a Solution Partner of SIEMENS. We integrated CADEC+ with Siemens Solid Edge to relive designers from repetitive tasks.

Mark received Hari Malini Joshi Award - 2022 From MCCIA for Developing New Products and Designs.

Mark is serving industry by various products in the field of design automation, CAD customization, data Management, Project Management, team collaboration, ERP integration, knowledge base CAD etc.

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## Background

Every Manufacturing Company has huge data about their products and components. Some data is of standard components, while some data is project specific components. As designers want to quickly create and release designs and drawings, they keep duplicate copies of product data, and slowly the data becomes huge so it is very difficult for designer to search and reuse the relevant data. It results in time consuming duplicate data creation by

designers. Therefore, every company needs a systematic solution for standardising, searching and reusing product data.

Mark has experience in PDM implementation for last 15 years. We customised PDM, developed utilities for our customers. Now we offer Pragyan to provide complete control from concept to release of data.

This is pocket book is for any engineer involved in product development to delivery process. It's a hands -on subject. So, we recommend the reader to download evaluations copy of Pragyan and try it for your CAD or non-CAD data.

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# What is Product Data Management



Any manufacturing company which creates its own designs needs PDM. Their offering can be product or project. Design, sales, purchase, materials, production, project departments need access to PDM.

PDM is a systematic, process-oriented approach to manage all technical activities in any manufacturing company. All design creations / modifications are stored and tracked through the PDM vault and application program.

A central vault, and a metadata database are essential for PDM implementation. The vaulted data is encrypted, and accessible based on login and security permissions to different users.

Since the data and database are centrally located, users can view , modify, reuse data from different computers.

Since the vault data is encrypted, a local view is defined on user computers to view permitted decrypted data.

For designers folder structure and standard components can be defined in PDM, so that they can use more standard designs in products and projects. Design workflow can be configured for approving and releasing designs. concurrent design approach should be followed in PDM.



Managers can have good visibility of design creations/ modification process, and system for approving and releasing designs. Sells, purchase, materials, production, projects can access common vault to view release design only.

Since the vault data is encrypted, a local view is defined on user computers to view permitted decrypted data.

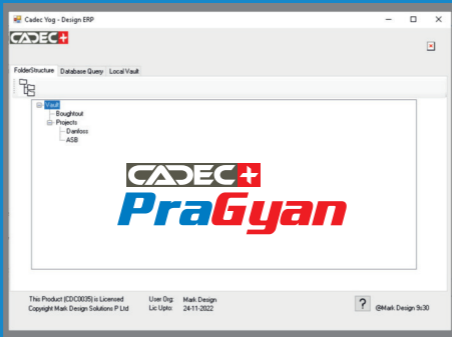
Revision scheme, permissions, design workflow need to be configured for every organisation.

Folder structure inside the vault is once defined and followed.

Unique file naming is recommended.

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# What is Pragyan



Pragyan is a simple yet intelligent PDM system. It provides knowledge of available product data and enhances its reuse. Pragyan has vault, database and front-end application for users. It is easily configurable (and customisable if needed). It can be implemented in LAN networks (and customisable for web browser and webserver if needed).

Pragyan comes with default effective workflow and default custom properties. It allows definition of customised folder structure.

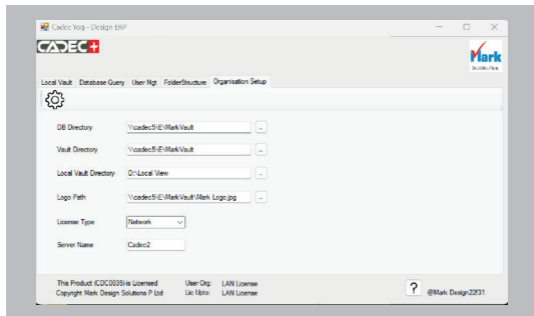
It allows to define user groups and their access permissions based on document status and folder path. It allows powerful search based on combination of multiple criteria, and provides check in / out, versioning.

Pragyan understands the file references between SolidWorks part/ assembly/ drg file (and customisable to understand file references between other 3D CAD software).

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In setting tab Admin user can manage

- ➡ DB directory
- ➡ Vault directory
- ➡ Local view directory
- ➡ Licenses
- ➡ Add, Delete, Modify users
- ➡ User access for folder and data



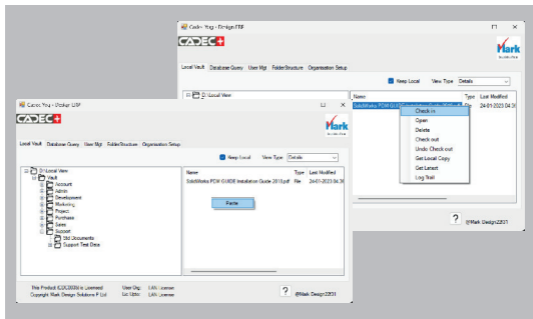
User can add data in local view by following mentioned below simple steps

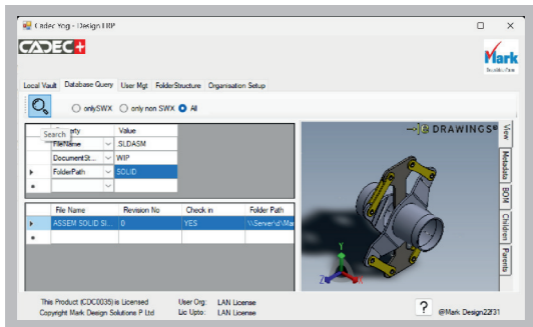
Step .1 Copy data

Step .2 Open desired folder in local view

Step .3 Right click and select paste

Step .4 Then Right click on file and click check in Vault and database will get updated





Local Vault Database Query User Mgt FolderStructure Organisation Setup

Search  only SWX  only non SWX  All

Search Property	Value
FileName	SLDASM
DocumentID...	WIP
FolderPath	SOLID

File Name	Revision No	Check in	Folder Path
ASSEM SOLID SI...	0	YES	\\Server\d\Ma

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## User can search permissible data across the vault by following simple steps

- Step .1** Switch to database query
- Step .2** Add multiple property/criteria & value.  
(criteria can be a file name, folder, status, custom property, project etc.)
- Step .3** Click Search button to get results.
- Step .4** Click on selected searched data to get more info like , preview , metadata, BOM, etc

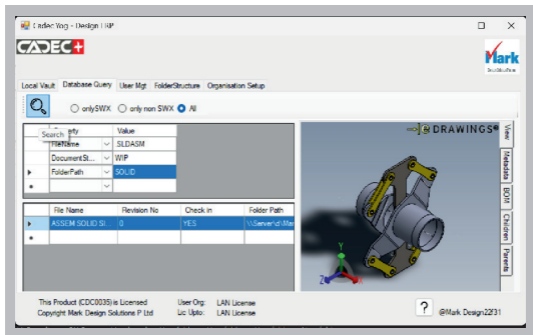
User can search data by Criteria.

Get local copy relevant data

Or

Check out relevant data (If need to modify)

Use or modify data & check in

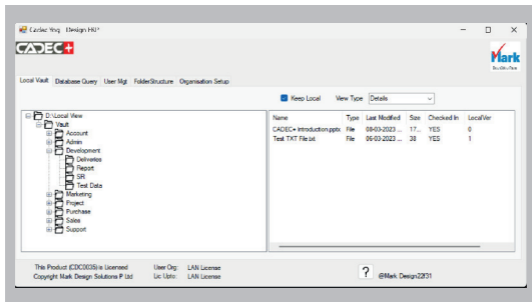


The screenshot shows the CADEC+ software interface. At the top, there is a search bar and a table of search criteria. Below the search bar, there are radio buttons for search filters: 'only SWX', 'only non SWX', and 'All' (which is selected). The search results table is as follows:

File Name	Revision No	Check in	Folder Path
ASSEM SOLID SI	0	YES	\\Server\d\Ma

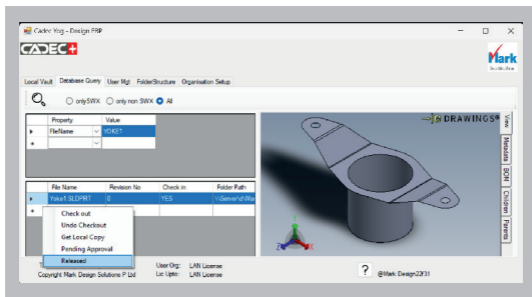
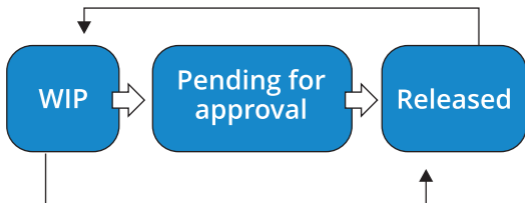
To the right of the table is a 3D CAD model of a mechanical assembly, labeled 'DRAWINGS'. The interface also includes a navigation pane on the right with options like 'View', 'Timeline', 'BOM', 'Children', and 'Parents'. At the bottom, there is a license notice: 'This Product (CDC0035) is Licensed Copyright Mark Design Solutions P Ltd. User Org: LAN License Lic Uplo: LAN License'. A user ID '@Mark Design2231' is visible in the bottom right corner.

- Pragyan keeps close eye on data version and modification .
- If user modify the data and saved it in the vault then its incremental revision number is created in the in vault .
- User can retrieve new or older revision data any time for reuse.





- Pragyan has simple yet effective work flow  
User can change data state as per rights given to him





# Our offering



## Design Configurator

Customize the design of equipment or machinery on-the-fly. Satisfy individual customer requirements and grow business

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## Workflow Configurator

Product Data Management (PDM), Project reporting & tracking, Team Collaboration

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## ERP Integration

Leverage BOMs, Improve Costing Reduce manual work in creating ERP BOMs and cost calculations





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