

EPLASS CDE

Successful project delivery with EPLASS CDE

It's common in infrastructure for project completion to be a lengthy journey. From approving plans, corrections, signing and more, it is crucial that all aspects are correct and in order, to ensure the project can be signed off.

Our EPLASS CDE platform provides successful control, coordination, and execution of projects of any size from any location, at any time with any device, making the digital review and approval processes much easier.

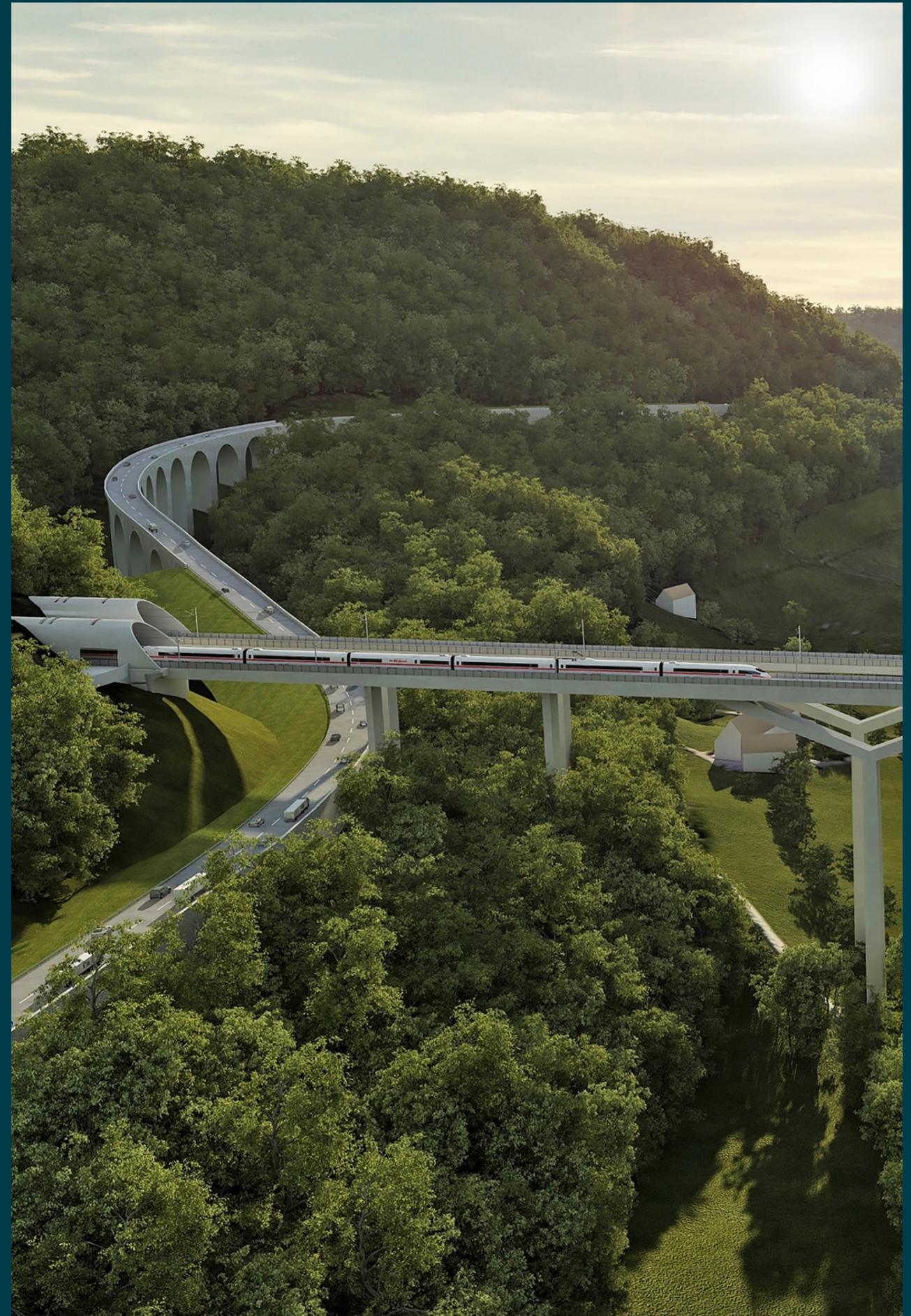
The platform guides and facilitates project management to successful completion, freeing teams to concentrate on their core tasks. In addition, the range of services includes solutions for process management, including BIM.

Having acquired over 20 years of experience in digital drawing management, EPLASS CDE

provides professional expertise in managing all sizes of construction projects and infrastructure measures. Whether dealing with small or large projects, infrastructure, public-private partnerships or public clients – the more complex the processes, the greater the benefits.

We offer many modules tailored to streamlining workflows.

Read on to find out how project teams can benefit from these.





Used in a variety of major projects for Deutsche Bahn AG, including expansion section ABS 38, VDE 8, S21, for DEGES GmbH, e.g. A3 Lahntal bridge, or in the PPP project A10/A24 Havellandautobahn, A7 Bockenem-Göttingen and structural engineering work like the Commerzbank Arena in Frankfurt.

Digitised process for document review and approval

Drawing Management.

A digitised process for reviewing and approvals is an essential element of the Drawing Management module. The focus is on the traceability of drawings and ensuring project members are fed the correct information they need to perform their everyday drawing tasks (deadlines, schedules and changes to name a few). In order to guarantee traceability, the emphasis is on workflows within EPLASS CDE, which are designed to teams and stakeholders' requirements.

Our workflow engine provides a high automation level and significantly reduces time spent checking and approving. A completely digital reviewing process is provided, including comments and check reports with electronic signatures on drawings. Changes may be traced at any time in a detailed protocol. This process also applies to all documents, not just drawings. Highly complex workflows, including parallel review of different reviewers are feasible with this workflow engine.

THE MOST IMPORTANT FUNCTIONS

- **Workflows:**
All kinds of documents (e.g. drawings, review reports, forms, supplements, tenders etc.) can be reviewed and distributed in workflows
- **Digital test run:**
EPLASS Professional provides an end to-end digital review process including commentary, review reports and signatures on documents. Changes can be traced at all times
- **Drawings are always up to date:**
The project participants always have access to the latest versions of the documents and can trace changes using a history. Organised clearly in packages, the required documents can be sourced quickly and easily
- **Quick viewer:**
Using the integrated viewers approx. 200 different formats can be shown and reviewed directly on our platform without downloading to your local computer. You save bandwidth with Citrix© technology.

OVERVIEW

- Workflow-based construction drawing management at the highest level (with parallel editing by different reviewers too)
- Automatic index management and document categorisation (drawing or document number)
- Comprehensive redlining functions (= graphic review entry) via layer on every document
- Electronic signatures directly on reviewed documents
- Schedule management with extensive controlling and reporting functions
- Comparison of different drawings or drawing indices
- Flexibly configurable platform for implementing custom processes as desired

BIM Collaboration

The fully integrated, workflow-based (BIM) project platform provides effective control, coordination and execution of projects of any size from any location, at any time and with any device. EPLASS CDE BIM Collaboration combines the preferred solution for plan and document management in many large projects with Building Information Modelling.

BIM consists of working methodology, process design, communication, organisation as well

as corporate and project culture. Only by incorporating all of these points can BIM achieve its full potential.

Integration of EPLASS and DESITE for BIM management with various functions for the visualisation, review, analysis and expansion of models as well as model-based communication between project participants.

For the challenges of tomorrow,
EPLASS CDE has developed

a Common Data Environment tailored to each project.

With our workflow engine, we can achieve a high degree of automation while significantly reducing testing and approval times. The software provides a completely digital test run including comments and test reports with electronic

signatures on your plans, partial and coordination models. Changes can be tracked at any time by means of a detailed protocol.



THE MOST IMPORTANT FUNCTIONS

- **Submodels:**
The first step in managing 3D BIM models in EPLASS is uploading submodels to the BIM database in IFC or CPIXML format. EPLASS enables users to display the configured models without any additional software installations using the integrated 3D viewer
- **Coordination models:**
Submodels are compiled individually to create 3D coordination models and managed by independent categorisation and versioning. Selected 3D coordination models are then assigned 4D and 5D documents
- **3D viewpoints:**
The powerful 3D viewer creates 3D view 3D viewpoints and generates automatic PDF sections. Redlining functions with comments are supported, as is workflow-based distribution. 3D viewpoints can also be compiled and exported in BIM collaboration format (BCF)

OVERVIEW

- The logical next step of the tried and tested drawing review feature
- All project information from DMS, the drawing management system and BIM on one platform
- The fully-integrated, workflow-based BIM solution from the market leader in infrastructure construction
- Automation: Categorisation & index management of all 3D, 4D and 5D documents
- Flexible modelling, any desired combination of coordination models from partial models
- Straightforward creation of 3D viewpoints with extensive redlining functions

Used in pilot projects of the the Federal Ministry of Transport and Digital Infrastructure (BMVI): Karlsruhe–Basel expansion and new section, Rastatt tunnel shell construction, A99 four-lane expansion Munich North Autobahn junction to the Haar junction, A111 Westend Bridge via Charlottenburg interchange.

DESITE BIM

DESITE BIM allows you to

interactively
analyse, visualise,
evaluate, add-to
and review
your 3D models.

With DESITE BIM you create the 3D coordination model using submodels from the project. You can also generate and forward viewpoints from this. In the model review, quality assurance is assured with the help of rules-based review, review of object properties, geometric review and review of contacts (collision check) between objects.

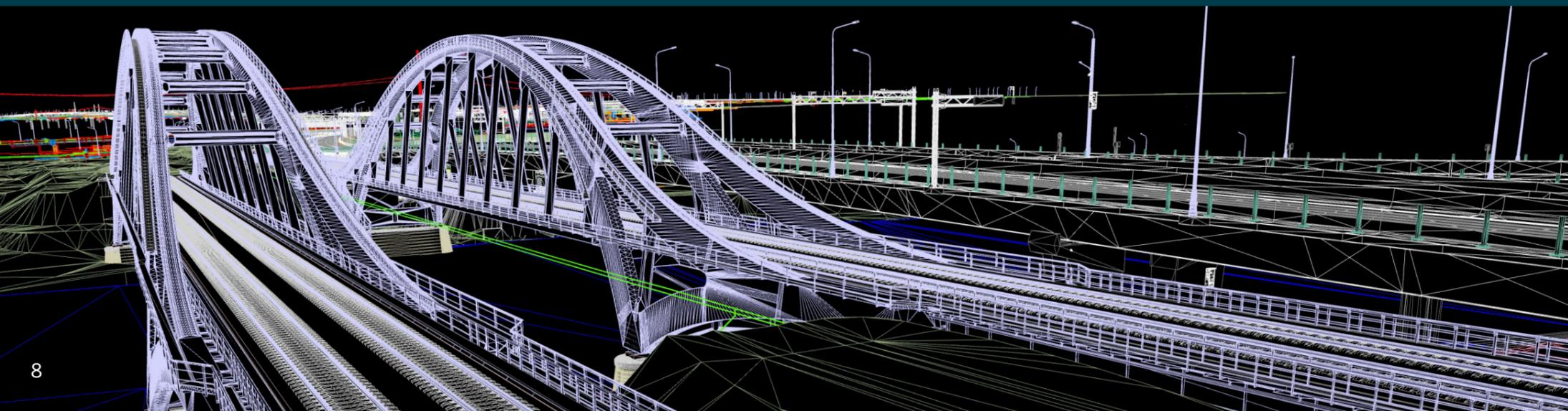
DESITE BIM helps you maintain a professional overview of your project – regardless of what information you need.

THE MOST IMPORTANT FUNCTIONS

- **4D drawing:**
Visualise construction progress in a 4D simulation, calculate the construction timelines using the 3D model and calculate quantities on the basis of the 3D model. You can also link documents to the 3D model and manage information relating to the building
- **Model review:**
In model review you can use your own rules to check whether your models are correctly and fully modelled. You can compare new and old models with one another and specify changes to objects
- **Clash detection:**
Collision check can be used to identify and analyse geometric conflicts in the 3D model. The test run can be either rules-based or automated
- **Quantity determination:**
The quantities for a model are determined using a list of specifications. This involves objects being linked to the specification items and calculated using formulas

OVERVIEW

- BIM Information Management
- BIM Quality Management
- BIM Project Management
- 4D Simulation
- Quantity Determination
- Model Checking
- DESITE directly linked to and integrated in EPLASS
- Data formats: IFC, CPI XML, DWF/x, DWG 2D/3D, DXF, OBJ, 3ds, VRML, SKP, LandXML
- Sections in model, up to six section planes
- Measuring in the model, points, distance and areas with point snap
- Generate viewpoints and animations, export view-points in BCF format



Used for instance in the public private partnership project Havellandautobahn A10-A24 and in Berlin in the BIM project, DEGES Westend Bridge.

Document management for infrastructure and building construction

Document Management System.

EPLASS Correspondence is the web-based document management system (DMS) for the structured filing, processing and distribution of correspondence and QM documents within the EPLASS CDE product family.

The DMS ensures all project-related information is readily available in a transparent platform for keeping track and answering project questions. As soon as a document is uploaded the DMS allocates, categorises, and codes them tailored

to project teams' preferences. This includes daily reports, meeting minutes and records of defects which can all be created, distributed and filed, in the DMS.

THE MOST IMPORTANT FUNCTIONS

- **Address management:**
EPLASS Correspondence helps you to organise all the addresses associated with your project. Contacts can be imported from MS Outlook. Any correspondence can be found right beneath a contact. This makes looking for these later considerably easier
- **Central document filing:**
Any correspondence, whether electronic or in paper form, can be filed and archived quickly and conveniently in EPLASS Correspondence. The end result is that you have access to a complete digital construction file at the close of the project
- **Convenient navigation:**
In EPLASS, documents can be filed by addresses, categories or key words. Users do not need to engage in laborious filtering as with other products
- **OCR text recognition:**
EPLASS can process scanned documents with OCR full text recognition on request. Thanks to complex text recognition functions, the process of filing and distributing documents is then assisted with suggestions from the software

OVERVIEW

- Central address management
- Editing & distribution of all correspondence
- Dedicated project email addresses for each database
- Direct link to MS Word and Excel
- OCR full text recognition and automatic data entry (optional)
- Structured filing and archiving of all correspondence including incoming and outgoing emails
- Create, distribute and file daily construction reports or meeting minutes quickly and easily
- Modules such as:
photo documentation and defect management etc. are also available
- Transparent and centralised on one platform



Use in various standard projects for the motorway authorities or state building authorities.
E.g. A8 Ulm-Augsburg, Rosenheim West bypass

Claim Management.

Claim Management allows you to process supplements in workflows, review them according to different aspects and retrieve or order them. Our powerful workflow engine can map even the most complex processes. The platform provides a digitised document run including editing, comments, graphical entries, attachments and signatures. At the push of a button a final file can be created at the end of the workflow, containing all relevant data.

Contract Controllers can define the process by assigning respective editors to each contract and defines the marginal conditions. The software then uses the reliable access protection system which ensures that each connected user only sees and processes that they have been granted access to. The documents in question are the latest versions with tracked changes via history.

With the integrated PDF viewer documents can be displayed, edited and checked directly on the platform without downloading them to your local computer. With the Citrix® technology, you save bandwidth and alleviates worries about different program versions on the computers of your project participants.

OVERVIEW

- Determine a contract controller:
Assign editors for contract and define marginal conditions
- Access protection system:
i.e. the user sees and edits only what the contract controller has activated for him/her
- Access to the latest versions of the documents at all times
- Integrated PDF viewer
(without downloading to local computer)
- EPLASS Supplement Management provides an end-to-end digital document flow, including editing, commentary, graphic entries, attachments (e.g. opinions, negotiation minutes etc.) and signatures on your documents

Form Management.

The Form Management module is the logical extension for controlled processing of PDF forms. Processes from outside the construction industry can also be implemented here. Forms of any kind, from RFI to obstruction notifications, through to vacation requests, can be processed, checked and distributed with our powerful workflow engine. Teams always have access to the latest versions of documents, with tracing via history.

By being clearly organised administration time can be significantly reduced. Moreover, the integrated PDF viewer ensures forms can be displayed, edited and checked directly on our platform without downloading them to your local computer.

The project participants always have access to the latest versions of the documents and can trace changes using a history. Clearly organised in packages, the required documents are found quickly and easily. Complex and time-consuming document filtering is not necessary.

OVERVIEW

- Integrated PDF viewer
- Workflow-driven editing of form fields
- Customised form fields
- Digital signature
- EPLASS form management provides end-to-end digital form process which includes: editing, comments, graphic entries, attachments, review reports and signatures on your documents. The various different form fields can be released for editing or blocked in the course of the workflow. Changes can be traced at all times in an extensive log

Defect Management.

The progress of construction projects of any size depends on many factors, including quality of the work, materials used, and even events determined by weather. Even with stringent planning and inspection, the occurrence of defects can never be completely ruled out. In order to have an overview and facilitate efficient management and distribution of defects it is prudent to implement a Defect Management System.

Within EPLASS CDE, the seamless integration of the mobile recording of defects on the construction site and the following processing in the office are in the foreground. Only a handheld device is required to record the defects; with no special app required. With the powerful

workflow engine, recorded defects are structured and processed reliably, meaning users can clearly see which processing phase defects are in, and who is processing it.

OVERVIEW

- Full defect history from the execution and warranty right through to operation
- Speech-to-text function for easier recording of defects
- Link to geographical points (e.g. Google Maps)
- Edit and record defects using your smartphone, tablet or PC
- Schedule management for monitoring all deadlines
- Flexibly configurable for implementing custom processes
- Can be used without additional software (simple web application)
- Automated generation of project-specific defect reports in MS Word, Excel or PDF file





Indispensable tools
for project management

Protocol Management.

For an overview of meetings throughout planning and construction, the Protocol Management System module provides protocol creation and management efficiently on the EPLASS CDE platform. The PMS is an extension of our document management capabilities, providing highly configurable, personally tailored management for the needs of users.

To benefit from even more extensive project management, EPLASS CDE can be used in conjunction with our most modular, ready-to-use CDE software CONCLUDE CDE.

Compliance and monitoring
of conditions

Condition Management.

Compliance and monitoring of legal conditions, and conditions relevant to operation, require high levels of expertise from involved parties. Large numbers of structural, content-related and planning requirements must be monitored, completed and documented before or during the construction phase. This complex, interwoven process can overburden simple database systems or manual spreadsheets. The Condition Management module is a tool for documentation, tracking and compliance of legal approval

or operational requirements from the checking process.

Seamless integration into the existing approval processes within the Drawing Management module is provided, with the requirements formulated in the platform to check reports and statements of parties involved. EPLASS CDE then transfers all the corresponding documents automatically into the condition management.

Objection Management.

During the planning of construction projects, approvals and objections must be handled from key stakeholders and the public who are affected by the works.

EPLASS CDE's Objection Management module organises the structured, on-time and process-reliable handling of objections, ensuring the public and stakeholders remain satisfied and up to date until completion.

Citizens are becoming more and more involved in planning approval and consultation procedures for new infrastructure projects. The planning, organisation and execution of consultation procedures is a mammoth task, and these can easily receive anywhere from several hundred to thousands of objections with a variety of

individual question topics. With tailored processes, intelligent search functions for standard objections and simultaneous processing by different divisions, EPLASS saves project participants time and money.

THE MOST IMPORTANT FUNCTIONS

- Clear organisation of objections using QR code label on each objection
- Dedicated project email address, e.g. objection-projectXY@eplass.com
- Intelligent fuzzy search for the optimisation and automation of response generation – standard objections are identified and colour coded
- Link to Google Maps for display of addresses on a map (distance from construction project)
- Workflow-based processing and answering of objections; central legal review of responses
- Splits objections up into individual questions and forwards these individually to the relevant divisions

OVERVIEW

- Convenient generation of standard answers for optimised processing
- Digital integration of hearing authorities such as district administrative offices
- Digital integration of legal departments and relevant divisions
- Schedule management for monitoring compliance with processing times and deadlines
- Automatic generation of response letter in Word and PDF files
- Archiving of signed reply letters in PDF format



The overall design of the route, all the tunnels and bridges of the railway project VDE 8 from Nuremberg via Erfurt, Leipzig and Halle to Berlin within a project worth more than 10 billion euros is reviewed and organised using EPLASS.

Also used for the Fehmarn belt rail link.

Handwritten digital signatures on drawings, forms and documents.

Digital signature

With EPLASS CDE you can use and implement the digital signature in many infrastructure projects, which significantly accelerates the secure process of plan review and plan approval. The EPLASS CDE offers the possibility of integrating three different types of signature: the simple, the advanced and the qualifying, affording comfortable and safe procedure through integration into the workflow.

Electronic signature

In many cases, the password release is used for the simple, electronic signature in EPLASS. The licenses at EPLASS are limited and related to one person (personal licenses) and are therefore clearly assigned to the signatory. Upon request, the signature can be printed on the digital plan using block letters or a signature.

Advanced signature

This option is offered for example, with the signotec Signature Pads and the Sigma SignPad as a real digital signature on drawings, forms and documents. This means that signing and completing tasks is made even more reliable and tamper-proof.

Qualifying signature

According to the German Civil Code equivalent to the manual signature. This is understood to be multi-factor authentication, i.e., the card identifies the user as an authorised signature. The PIN is entered via the device and confirms the ID.

The construction diary is one of the most important documents in a project.

All key information such as the date, object or construction section, weather, working hours, worker or equipment use etc. must be recorded and documented in one daily report.

This falls under the duties of construction management and serves to provide complete and comprehensive documentation of the progress of construction.

Careful editing is ensured from the outset. It should not be possible for information to be changed at a later point in time.

OVERVIEW

- Fully customisable templates for daily construction reports
- Structured filing of individual daily construction reports
- Categories & intelligent search function
- Automated generation of project-specific daily construction reports
- Easy entry of the relevant information
- Workflow-based review of daily construction reports
- Complete history of daily, monthly and annual construction reports
- Flexibly configurable for implementing your custom processes

Requirement Management.

The sheer variety of construction, content and design-based requirements which must be monitored, complied with and documented before or during the construction project, can often overwhelm the simple database applications or Excel lists.

Here, a workflow for extracting the individual requirement items launches automatically. The individual requirements are generated via our viewer. Then a second workflow starts, with evidence of the fulfilment of requirements requested from the involved reviewers initially. In a second stage this evidence needs to be confirmed and signed.

OVERVIEW

- Workflow-based requirement management
- Seamless integration of your drawings in the EPLASS review process
- Convenient extraction of individual requirements from your PDF documents
- OCR recognition on request
- Graphic representation of individual requirements in evaluated review reports and requirement documents
- Schedule management with extensive controlling and reporting functions
- Excel analyses for monitoring and documenting requirement compliance
- Flexibly configurable platform for implementing custom processes as desired
- Tried and tested in major projects, e.g. Stuttgart 21 with new Wendlingen-Ulm line

Tendering and Contracting.

EPLASS Tendering & Contracting provides you with intelligent, customisable workflows and a powerful, fully-integrated viewer. This makes it possible for as many project participants as necessary to work on the same tender document in parallel and at the same time.

Comments, corrections and review entries can be generated directly on the tender documents in the form of so-called redlining markups on a workflowdriven basis. Thanks to the integrated rights concept, all authorised

redlining markups are protected against editing. EPLASS thereby ensures optimum process reliability and full logging of all actions.

OVERVIEW

- Integrated schedule management for monitoring all deadlines
- Flexibly configurable for custom processes
- Automatic index management and document categorisation
- Control of individual reading and writing rights
- Intelligent workflows master complex document flows
- Parallel, simultaneous review
- Automatic sending of emails
- Full logging of all actions
- Powerful viewer incl. full redlining functions

About Thinkproject

Europe-based Thinkproject is a leading construction and engineering SaaS provider. Turning intelligence from data and industry experts into an advantage for customers, it is at the forefront of the digitalisation and transformation of the AECO industry.

With 450 employees worldwide, Thinkproject provides digital solutions enabling the management of asset lifecycles to:

2,750

CUSTOMERS AND MORE THAN

250,000

USERS, IN OVER

60

COUNTRIES

thinkproject