Automated DATEV Integration

Seamless Accounting Connectivity between Project Management and Financial Accounting

Event-driven synchronization of debtors, creditors and outgoing invoices
Technology: DATEV Desktop API Accounting (REST) | Projectile ERP

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1. Executive Summary

Integrating project management systems with financial accounting poses significant challenges for organizations. Manual data entry, error-prone exports, and time-consuming reconciliation processes tie up valuable resources and increase the risk of posting errors.

This whitepaper describes a comprehensive interface solution that delivers fully automated, bidirectional data synchronization between an ERP/project management system and DATEV accounting software. Built on the DATEV Desktop API Accounting (REST interface), the solution covers three core areas: automated import of incoming invoices, event-driven export of debtor and creditor master data, and real-time transfer of posting batches for outgoing invoices.

> *Key benefit: The event-driven architecture synchronizes data in real time – from the moment an invoice is finalized to the completed DATEV posting, without any manual intervention.*

2. Starting Position and Challenges

In many project-oriented companies, the project management system and financial accounting exist as separate systems. This leads to typical issues that affect both efficiency and data quality.

2.1 Common Pain Points

Manual double entry: Debtor and creditor master data must be maintained in both systems. Changes to addresses, company names, or contact details are frequently made in only one system, leading to inconsistencies.

Delayed postings: Outgoing invoices are created in project management but must be manually transferred to accounting via CSV export. This delays posting and hampers timely liquidity planning.

Lack of transparency: Incoming invoices posted in DATEV are not visible in project management. Project managers have no overview of costs already posted.

Error susceptibility: Manual data transfers carry a high risk of errors, particularly when assigning cost centers, cost types, and tax codes.

2.2 Solution Requirements

These challenges give rise to core requirements: The solution must provide event-driven, automatic synchronization that operates without manual intervention. It must be multi-tenant capable, support a flexible posting matrix, and offer comprehensive error handling. Furthermore, data ownership must be clearly defined: for debtors and outgoing invoices, the project management system is the leading system; for creditors and incoming invoices, DATEV takes the lead.

3. Solution Architecture

The interface solution is based on a modular architecture with four main components, each of which can be configured and activated independently.

3.1 Import of Incoming Invoices

The import of incoming invoices from DATEV is time-controlled. A configurable scheduler initiates synchronization at regular intervals. Only committed posting batches whose descriptions match a configurable filter pattern (regular expression) are read.

The process includes automatic determination of the tenant ID and current fiscal year, querying relevant posting batches filtered by commit status and description, extracting individual postings with account number verification, and automatic creation as a voucher in the project management system. Previously transferred posting batches are logged and skipped in subsequent synchronization cycles.

3.2 Export of Debtor Master Data

The export of debtor master data is event-driven. As soon as a debtor number is assigned to a contact for the first time, the contact is automatically transferred to DATEV. For subsequent changes to master data such as address or company name, an update mechanism is triggered that first retrieves the current state from DATEV, updates the changed fields, and writes the result back.

The configuration allows the export to be activated individually per tenant and uses an intelligent search function to define which contacts should be exported for which tenant.

3.3 Export of Creditor Master Data

Complementing the debtor export, automated transfer of creditors from DATEV to the project management system is also implemented. During each voucher import, the system checks whether the associated creditor already exists. If not, the creditor is automatically created. Existing creditors are updated when changes occur in DATEV, ensuring master data remains consistent across both systems.

Creditor contacts imported from DATEV are marked as read-only in the project management system, since DATEV is the leading system here. Additional plausibility checks ensure that vouchers can only be assigned to budgets when the creditor matches in both objects.

3.4 Export of Outgoing Invoices

The export of outgoing invoices is the centerpiece of the integration. When an invoice is finalized or cancelled in the project management system, the postings are automatically transferred to DATEV as a posting batch. Invoice line items are aggregated according to a configurable posting matrix and assigned to the correct accounts.

The posting matrix enables flexible account assignment based on four dimensions: invoice recipient country (domestic, EU with domestic tax, EU reverse charge, third country), invoice type, tax rate, and cost type. These dimensions are resolved to a unique account number key.

4. Special Billing Scenarios

The interface solution also maps complex billing scenarios that are common in practice at project-based service companies.

4.1 Advance Payment Invoices

Advance payments are not revenue-effective and are recorded on special interim accounts. The solution supports the complete lifecycle of advance payments: from the initial advance payment invoice through successive dissolution in follow-up invoices to complete settlement.

An intelligent FIFO (First-In-First-Out) method ensures that when multiple advance payment invoices exist per project, the oldest advance payment is dissolved first. Comprehensive KPIs at invoice and project level provide insight into the current status of advance payments at all times.

When dissolving advance payments, the posting transaction key is automatically set to 40, which ensures posting without VAT – since the tax was already remitted with the original advance payment invoice.

4.2 Progress Billing / Installment Invoices

Installment invoices, like advance payments, are initially not revenue-effective and only become revenue when a partial or final invoice is issued. The solution maps the entire process: installment invoices are posted to special accounts, and only when the final invoice is issued – which contains all installments as negative line items – does the revenue-effective posting occur.

Separate KPIs at project level show the status of open and dissolved installments, broken down by internal and external services. This provides a precise overview of actual project progress.

5. Audit-Proof Document Storage and DATEV Document Transfer

Beyond pure posting data transfer, the solution also includes automated transfer of document images to DATEV DUO. This process ensures that digital document storage complies with GoBD requirements (German principles for proper management and storage of books, records, and documents in electronic form).

5.1 Automated XML and ZIP Creation

When an outgoing invoice is stored in an audit-proof manner, an XML metadata file is automatically generated alongside the PDF document. This XML file follows the DATEV document transfer format and contains all information relevant for assignment: a unique GUID for document identification, the filename of the document image, and a hierarchical filing structure (level IDs).

Both files – PDF and XML – are then packaged into a ZIP archive and stored on a configurable server path. The DATEV document transfer automatically transmits the ZIP files to DATEV DUO.

5.2 Linking Postings with Documents

A key added value of the solution is the automatic linking of posting records with their associated document images. When creating a posting batch, the parameters document_link and document_system are set for each posting record. This enables direct access to the associated document image from within DATEV – a significant efficiency gain during audits and daily operations.

6. Multi-Tenant Configuration

The entire solution is built with multi-tenant capability. The following modules can be activated and configured independently per DATEV tenant:

Module	Configuration Options
Incoming Invoice Import	Activation via checkbox, account filters with tax rates, regular expression for posting batches, scheduler configuration
Debtor Export	Activation via checkbox, advanced search for contact selection per tenant
Creditor Export	Automatic during voucher import, plausibility checks for budget assignment
Outgoing Invoice Export	Activation via checkbox, posting matrix selection, advanced search for invoice filtering
Document Transfer	XML filename, hierarchical level IDs (with variables for year/month), server path

7. Error Handling and Monitoring

A robust error handling concept is an integral part of the solution. The response status of the DATEV server is checked with every API call. If an error occurs, a configurable notification is triggered containing detailed information about the affected record and the error status.

For the export of outgoing invoices, a manual action is additionally available to re-trigger a failed export. The visibility of this action can be restricted to defined user groups via an authorization concept.

Notifications can be sent as email or internal system messages depending on the configuration. This ensures that errors are detected and resolved promptly before they affect downstream processes.

8. Benefits and Value Proposition

8.1 Efficiency Gains

Fully automated synchronization completely eliminates manual export and import steps. Posting records are transferred in real time, reducing the throughput time from invoicing to posting to just seconds.

8.2 Data Quality

The event-driven architecture ensures that master and transaction data are always consistent across both systems. Manual transfer errors are eliminated, and the configurable posting matrix guarantees correct account assignment.

8.3 Compliance and Audit Readiness

Automatic document linking and DATEV document transfer ensure GoBD compliance. Every posting is directly linked to its associated document image, significantly simplifying audits.

8.4 Flexibility

The multi-tenant, modular architecture allows the solution to be introduced gradually and adapted individually to the requirements of different entities or business areas. The configurable posting matrix covers even complex tax scenarios.

> *Result: An end-to-end, automated process chain from invoice creation in the project to the completed posting in DATEV – without media breaks and with full audit compliance.*

9. Technological Foundation

The interface utilizes the DATEV Desktop API Accounting in its REST variant. Communication takes place via standardized HTTP methods (GET, PUT, POST) with JSON payloads. For document transfer, the DATEV document transfer XML format version v06.0 is used, which can be validated using the XSD files provided by DATEV.

The REST architecture ensures loose coupling of both systems and enables straightforward maintenance and extension of the interface. Every API call is designed to be idempotent, so that a repeated call in case of network issues does not create duplicates.

10. Conclusion and Outlook

The DATEV integration solution described here addresses the central challenges of accounting connectivity in project-oriented companies. By combining event-driven real-time synchronization, a configurable posting matrix, and automated document transfer, an end-to-end process chain is created that minimizes manual interventions and maximizes data quality.

The modular architecture enables a phased rollout and flexible adaptation to changing requirements. Particular added value comes from the support of complex billing scenarios such as advance payments and installment invoices, which frequently lead to posting errors in practice.

The solution demonstrates how deep system integration between project management and financial accounting can be realized in a way that meets the requirements of both efficiency and compliance.