

# Calibration CMS - User Guide

A certificate that cannot skip a desk.

For plants where certificates skip desks. Technician, engineer, admin - each signs. Scan the QR; the mill record still holds.

Live system: <https://cms-web-production-038f.up.railway.app>

Access (demo only)

SAP 10003 Technician; all demo passwords Cms@2026

Try this

1. Technician submit
2. Engineer verify
3. Admin approve PDF

Full user guide

Calibration Certificate Management System(CMS)

User Guide - Role-wise Web & Mobile SOPDSCL Sugar - Ajbapur

Document: DSAJ-IMSR-CMS-UG-01Version 1.7 | August 2026

## 1. Introduction

The Calibration Certificate Management System (CMS) replaces the legacy MS Access / Excel workflow for instrument calibration at DSCL Sugar, Ajbapur. This guide is organized by role so each user can follow a complete standard operating procedure (SOP) for every action they are allowed to perform on web and mobile.

Web portal for Technician, Engineer, Administrator, and Customer roles

Android mobile app for field calibration (offline-capable) and customer portal

Central REST API with PostgreSQL

PDF certificates (DSAJ-IMSR-AEIN-01 layout), instrument tags, and public QR verify

Maker-checker workflow: Technician Engineer verify Administrator approve

### 1.1 Production URLs

Service

URL

Web Portal

<https://cms-web-production-038f.up.railway.app>

API

<https://cms-api-production-6d0a.up.railway.app>

### 1.2 Local Development URLs

Service

URL

Web Portal

<http://localhost:3000>

API

http://localhost:4000/api

1.3 Document control ID

Controlled document: DSAJ-IMSR-CMS-UG-01. Certificate layout reference: DSAJ-IMSR-AEIN-01.

2. Sample Login Credentials

Password for all demo accounts: Cms@2026

SAP ID

Name

Role

Primary use

10001

Rohit Sharma

Administrator

Approve, admin, users, ERP, org

10002

Shobhit Sharma

Engineer

Verify, request instruments, anomalies

10003

Pramod Kushwaha

Technician

Create/submit calibrations (web & mobile)

20001

External Customer

Customer

Portal: dues, certificates, service requests

Local CMS user accounts are always managed in Administration, independent of any ERP connection. ERP is optional and disabled by default.

3. Permission Matrix (Role Feature)

= allowed. - = not allowed. Public QR verify requires no login.

Feature / action

Technician

Engineer

Administrator

Customer

Dashboard (plant)

- (redirects to Portal)

Instruments - view / filter

-

Calibrations - create / edit draft / submit

- 
- Calibrations - verify

- 
- Calibrations - approve + certificate PDF

- 
- Delete approved calibration history

- 
- Approvals hub - awaiting verification (SUBMITTED)

- 
- Verify
- Verify

- 
- Approvals hub - awaiting approval (VERIFIED)

- 
- Approve

- 
- Approvals hub - change requests (view)

- 
- Approvals hub - decide change requests

- 
- Request add/delete field or master instrument

- 
- Master instruments - view / update cal data
- view

- Tag history / Generate Tag PDF / Reports

- QR image on approved calibration detail view view view

- Anomalies / analytics

- Administration - users, import/export, alerts

- Activity (audit log)

- Organization hierarchy

- ERP integrations

- Customer portal (dues, certs, requests)

- Mobile Field calibrate + offline queue

-  
Mobile menu - Queue / Anomalies

-  
Mobile menu - Approvals

-  
(verify + view requests)  
(full hub)

-  
Mobile menu - Admin / Activity / Org / ERP

-  
Mobile Portal only

-  
Public QR certificate verify

Public

Public

Public

Public

4. Shared Calibration Workflow

Status path:

DRAFT - created by Technician (or Engineer/Admin). Editable.

SUBMITTED - technician submits for verification.

VERIFIED - engineer verifies data.

APPROVED - administrator approves; certificate number finalized; PDF generated.

Segregation of duties (when enabled in Alert Settings): the same person cannot verify or approve a calibration they created or verified.

Discard / Reopen actions appear on the calibration detail page according to status and role.

Certificate PDF downloads require a signed-in session (Bearer token); use View

Certificate PDF or Regenerate if missing.

Dashboard chips vs Approvals hub:

Awaiting verification = calibrations in SUBMITTED (Engineer/Admin verify).

Awaiting approval = calibrations in VERIFIED (Admin approve).

Pending requests = instrument/service change requests (Admin decide).

The Approvals menu (Engineer/Admin only) lists these role queues. Technicians do not see Approvals.

5. Technician SOP (SAP 10003)

Goal: capture field or office calibrations accurately and submit them for engineer verification. You cannot verify, approve, manage users, or open Administration.

#### 5.1 Web - Sign in

Open <https://cms-web-production-038f.up.railway.app> in Chrome or Edge.

Enter SAP ID 10003 and password Cms@2026.

Click Sign In. Expected: Dashboard loads with plant alert chips and instrument type counts.

#### 5.2 Web - Dashboard

Review overdue / due-soon chips and lists.

Click a chip or instrument type row to jump to the filtered Instruments or Calibrations list.

Expected menus: Dashboard, Instruments, Calibrations, Master Instruments, Tag History, Reports. No Approvals, Anomalies, Administration, or Portal.

#### 5.3 Web - Instruments

Open Instruments from the top navigation.

Filter by type, tag number, functional location, or due state (Overdue / Due Soon).

Click a tag to open instrument detail and calibration history.

Click New Calibration when ready to enter points.

#### 5.4 Web - New calibration

From instrument detail (or Calibrations New), set Calibration Date and Calibration Due Date (due defaults from frequency; editable).

Select 5-point or 10-point mode.

For each point enter Actual and Actual/Display; review OUTPUT Std., Error %, and Status (Pass/Fail vs accuracy).

On Maintenance Sheet: for each part name set Status (OK / Not OK / Replaced) and enter Remarks for that part.

Enter Overall Remarks if needed.

Click Save Draft or Save & Submit for Verification.

Expected: status becomes DRAFT or SUBMITTED; toast confirms success. Detail shows dates, points, maintenance remarks, and overall remarks.

#### 5.5 Web - Calibrations list & detail

Open Calibrations; filter by status (Draft, Submitted, Verified, Approved).

Open a record to see dates, full point sheet (with Status), maintenance Status/Remarks, and overall remarks.

On your own draft, click Edit Draft to change dates, points, maintenance remarks, and overall remarks; then Save Changes.

Expected: Verify and Approve buttons are not available to you. Certificate PDF (after approval) includes the same sheet columns and remarks.

#### 5.6 Web - Tag history & reports

Open Tag History; search by tag number; review past calibrations.

After a successful search, click Generate Tag PDF to download the instrument tag.

Open Reports as an alternate path to generate a tag PDF by tag number.

Expected: you can view history and generate tags; you cannot Delete History.

#### 5.7 Web - Approved certificate QR

Open an APPROVED calibration detail after Admin approval.

Expected: a Public verification QR image and link appear. Scan or open the link (no

login) to verify. Technicians do not have an Approvals menu.

#### 5.8 Mobile - Install & sign in

Install the CMS Android APK (release build pointed at the production API).

Open CMS Mobile; enter SAP ID 10003 and password Cms@2026; tap Sign In.

Expected: CMS brand top-left; menu ( ) top-right opens a drawer. Operations include Field, Dashboard, Instruments, Calibrations, Masters, Tag History, Reports. No Approvals, Queue, Anomalies, or Admin.

#### 5.9 Mobile - Download catalog & calibrate

While online, tap Download Catalog so tag lookup works offline.

Open Field; enter a tag (e.g. PG451) and open the instrument.

Set Calibration Date and Due Date (pickers). Due defaults from frequency; you may override.

Choose 5-point or 10-point. For each point enter Actual and Actual/Display; review OUTPUT Std., Error %, and Pass/Fail Status.

Maintenance: for each part name, tap Status to cycle OK NOT\_OK REPLACED and type Remarks in the field under that part.

Enter Overall remarks; tap Save Draft or Save & Submit.

When back online, use Upload Queue if items were saved offline.

Expected: dates, points, per-part remarks, and overall remarks sync; Engineer verifies on Approvals/web.

#### 5.10 Mobile - Dashboard & Tag History

Open Dashboard from the menu for summary alerts similar to the web dashboard.

Open Tag History; load a tag; tap Generate Tag PDF when the instrument is loaded.

#### 5.11 What Technician cannot do

See Approvals menu; verify or approve calibrations

Decide change requests; manage users; import/export; alert settings; org; ERP; anomalies

Access Customer Portal or delete calibration history

### 6. Engineer SOP (SAP 10002)

Goal: verify submitted calibrations, request instrument/master changes, and monitor anomalies. You can also create calibrations like a technician. You cannot approve certificates or open Administration.

#### 6.1 Web - Sign in & navigation

Sign in with SAP ID 10002 / Cms@2026.

Expected menus: Dashboard, Instruments, Calibrations, Approvals, Master Instruments, Tag History, Reports, Anomalies. No Administration / Activity / Organization / ERP / Portal.

#### 6.2 Web - Verify a calibration

From Dashboard, click Awaiting verification, or open Approvals Awaiting verification.

Alternatively open Calibrations; set status filter to Submitted.

Open a calibration; review points, error %, maintenance, and remarks.

If segregation of duties is on, confirm you are not the calibrator.

Click Verify (from Approvals row action or calibration detail).

Expected: status becomes VERIFIED; toast confirms; item awaits Administrator approval.

#### 6.3 Web - Create / submit calibrations

Follow the same steps as Technician 5.4-5.5 when you perform calibrations yourself.

#### 6.4 Web - Approvals hub & change requests

Open Approvals. You see Awaiting verification and Change requests (view).

You do not see Awaiting approval (Admin only) and cannot Approve certificates.

On Instruments or Masters, use the request form to add or delete a field/master instrument.

Enter reason; submit; confirm the request appears under Change requests as PENDING.

Expected: Administrator decides Approve or Reject on change requests; you cannot decide.

#### 6.5 Web - Masters, history, reports

Open Master Instruments to view standards and update calibration data where permitted.

Use Tag History (including Generate Tag PDF) and Reports as in Technician 5.6.

#### 6.6 Web - Anomalies

Open Anomalies from navigation.

Review advisory flags on calibrations; investigate outliers before verify/approve cycles.

#### 6.7 Mobile - Engineer menu

Sign in with 10002. Open menu: Field, Dashboard, Instruments, Calibrations, Approvals, Masters, Tag History, Reports, plus Queue and Anomalies under Workflow.

Field: same offline calibrate / catalog / upload flow as Technician.

Approvals / Queue: verify SUBMITTED calibrations only (no Approve on submitted items).

Dashboard Verify chip opens Approvals.

Anomalies: review anomaly list synced from the API.

Tag History: Generate Tag PDF after loading a tag.

#### 6.8 What Engineer cannot do

Approve calibrations or generate final certificate approval

Decide change requests; manage users; import/export; org; ERP; activity audit admin

Delete calibration history; access Customer Portal

#### 7. Administrator SOP (SAP 10001)

Goal: approve calibrations, decide instrument requests, manage local CMS users and plant settings, and optionally configure ERP. Full plant navigation plus Administration menus.

##### 7.1 Web - Sign in & navigation

Sign in with SAP ID 10001 / Cms@2026.

Expected menus: all plant menus + Anomalies + Administration + Activity + Organization + ERP. No Customer Portal menu (portal is for Customer role only).

##### 7.2 Web - Approve calibration & certificate PDF

From Dashboard, click Awaiting approval, or open Approvals Awaiting approval.

Alternatively open Calibrations; filter status = Verified.

Open the calibration; review points and engineer verification.

If segregation of duties is on, confirm you are not the calibrator or verifier.

Click Approve (from Approvals row action or calibration detail).

Expected: status APPROVED; certificate number assigned; PDF generated.

Click View Certificate PDF to download (authenticated).

If PDF is missing, click Regenerate Certificate PDF, then download again.

On the approved detail page, confirm the Public verification QR image and link are shown.

##### 7.3 Web - Approvals hub (verify, approve, change requests)

Open Approvals. Sections: Awaiting verification, Awaiting approval, Change requests.

Verify SUBMITTED items and Approve VERIFIED items from this hub or from calibration detail.

Under Change requests, Approve or Reject pending add/delete (and service) requests.

Expected: counts match Dashboard chips for verification, approval, and pending requests.

#### 7.4 Web - Delete calibration history

Only APPROVED calibrations can be deleted.

From Tag History or calibration detail, click Delete History; confirm the prompt.

Expected: record permanently removed. Draft/Submitted/Verified cannot be deleted this way.

#### 7.5 Web - Administration Manage local users

Local CMS users are independent of ERP.

Open Administration.

In Local CMS users table, note User ID, SAP ID, Name, Role, Customer org, Active.

Edit SAP ID or Name in the row; click Save.

Change Role via dropdown (Administrator / Engineer / Technician / Customer).

For Customer role, select Customer org so portal access works.

Toggle Active or click Deactivate. The last active administrator cannot be deactivated.

Click Reset pwd; enter a new password (min 8 chars, letter + number).

Create User: enter SAP ID, name, password, role Create User.

Change My Password: enter current and new password Update Password.

#### 7.6 Web - Customer organizations & instrument assign

In Administration, under Customer organizations, review code, name, instrument/user counts.

Create org: code, name, plant Create org.

Assign instrument: select customer org and instrument Assign instrument.

Expected: Customer users only see instruments assigned to their organization.

#### 7.7 Web - Import / Export

Export JSON or Export Excel for catalog backup/review.

Download Import Template; fill type codes (e.g. PG) and location codes.

Import Excel/CSV/JSON or MS Access (.mdb); review created/skipped/error counts.

#### 7.8 Web - Alert settings

Set Due-soon window (days) and Shift hours.

Toggle Enforce segregation of duties.

Click Save Alert Settings. Expected: toast confirms; dashboard uses new window.

#### 7.9 Web - Activity

Open Activity; optionally filter by action name.

Expected: audit rows show when, user, action, entity.

#### 7.10 Web - Organization

Open Organization; view HQ Subdivision Plant (Ajbapur).

Create units with kind, code, name, parent, display name, certificate prefix as needed.

Default single-plant Ajbapur behavior remains the production baseline.

#### 7.11 Web - ERP integrations (optional)

Connectors are disabled by default. CMS works fully without ERP.

Open ERP Integrations.

Upsert connection: plant, provider (SAP/Oracle/Dynamics/Generic), name, base URL, API key, config JSON, Enabled.

Click Save; click Test to record last-test OK/Failed.

Outbound events POST only when Enabled and base URL are set.

Inbound webhook: POST /api/integrations/webhooks/:provider with optional header X-CMS-Webhook-Secret.

#### 7.12 Mobile - Administrator menu

Sign in with 10001. Open menu: full Operations (including Approvals), Workflow (Queue, Anomalies), and Administration (Administration, Activity, Organization, ERP).  
Approvals hub: Verify SUBMITTED, Approve VERIFIED, and decide change requests (OK / No).  
Dashboard Verify / Approve / Requests chips open Approvals.  
Queue shows SUBMITTED with Verify only (certificate Approve is on Approvals / VERIFIED list).  
Activity / Organization / ERP: review audit, org tree, and connectors when online.

#### 7.13 What Administrator cannot do

Use the Customer Portal UI (use a Customer account instead)

Bypass segregation of duties when that setting is enforced

#### 8. Customer SOP (SAP 20001)

Goal: view assigned instruments and dues, download approved certificates, and request calibration service. You only see data for your customer organization.

##### 8.1 Web - Sign in

Open the web portal; sign in with SAP ID 20001 / Cms@2026.

Expected: you are taken to Customer Portal (not the plant dashboard). Navigation shows Portal only.

##### 8.2 Web - Instruments & dues

On Customer Self-Service, use Due filter (All / Overdue / Due soon / Never calibrated / OK).

Review Tag, Type, Service, Next Due, State.

Expected: only instruments assigned to your organization appear.

##### 8.3 Web - Certificates

In Approved Certificates, locate Certificate, Tag, Date.

Click Download PDF (authenticated portal download).

Optionally click Open under Public verify to open the QR verify page.

##### 8.4 Web - Request calibration

Select an assigned instrument; enter Reason; click Submit Request.

Under My requests, confirm Status = PENDING (or later updates).

##### 8.5 Mobile - Customer Portal

Sign in with 20001. Expected: Portal tab only.

Review Instruments & dues list.

Open Certificates; tap download when a PDF is available.

Submit a calibration request with reason; refresh to see My requests.

##### 8.6 What Customer cannot do

Access plant Dashboard, Instruments, Calibrations, Approvals, Masters, Admin, ERP

Create or verify calibrations; see instruments not assigned to their organization

If the portal is empty: ask an Administrator to create/link your Customer org, assign instruments, and set your user role to Customer with that organization.

#### 9. Public QR Certificate Verify

On an APPROVED calibration detail (web), scan the on-screen QR or open the verify link.

Or scan the QR embedded in the certificate PDF / open /verify/{token}.

No login is required.

Expected: public certificate summary for the token; invalid tokens show not found.

#### 10. Troubleshooting

Issue

## Solution

Cannot sign in

Verify SAP ID and password. Check network. Confirm API URL is reachable.

Web shows API errors

Ensure NEXT\_PUBLIC\_API\_URL points to the live API. Clear browser cache.

CORS error on web

Administrator must set CORS\_ORIGIN on API to match web URL exactly.

Mobile: Instrument not found

Download Catalog while online before field work.

Mobile: Upload fails

Check network. Re-login if session expired. Retry Upload Queue.

PDF not available

PDF is generated only after Administrator approval; use Regenerate if missing.

Overdue alerts

Complete calibration verify approve; next due updates on approval.

Import fails

Download Import Template. Use type codes (PG) not names. Match column headers.

MDB import fails

Export table from MS Access to Excel (.xlsx) and import Excel instead.

Delete history greyed out

Only APPROVED calibrations. Administrator role required.

Admin page loops on /users or /alerts

Hard-refresh; session is loaded once on mount (fixed v1.4+).

All users became Technician

API restores demo Admin/Engineer on boot if no active ADMIN remains.

Customer portal empty

Admin: assign instruments to customer org; set user role Customer + org.

ERP test fails

Optional. Leave Enabled off unless base URL and API key are configured.

Certificate create fails (duplicate no.)

Deployed counter syncs from existing certificate numbers.

Approvals menu empty but Dashboard shows Awaiting approval

Sign in as Admin; Approvals lists VERIFIED calibrations. Technician has no Approvals menu. Change-request section can still be empty.

Mobile Approve on Queue fails

Queue is verification-only (SUBMITTED). Approve VERIFIED items from Approvals.

Tag PDF download fails

Stay signed in; use Generate Tag PDF on Tag History or Reports after search.

Mobile missing cal/due dates or part remarks

Use APK built after v1.7: Calibrate screen has date pickers and a Remarks field under each maintenance part.

## 11. Document Control

Item

Value

System

Calibration Certificate Management System (CMS)

Plant

DSCL Sugar - Ajbapur

Document

DSAJ-IMSR-CMS-UG-01

Version

1.7 - August 2026

Certificate layout reference

DSAJ-IMSR-AEIN-01

Prepared for

Instrument Maintenance & Quality Assurance

Mobile release API

<https://cms-api-production-6d0a.up.railway.app>

Prepared by Digicane Systems. Treat demo accounts as public evaluation credentials.