



Safeguarding SAP Business Continuity with Skywind

Proactive Prevention and
Control of Business Disruptions



Skywind Profile

Software

Development of
Skywind Analytical Platform
for SAP Cloud based SAP® related solutions

4C™

+

JAM™

+

soda™

Solutions



Design and implementation of SAP Business Intelligence, Performance Management, Planning and Data Warehousing solutions.



Development, optimization and maintenance of SAP Infrastructure (Basis) incl. SAP upgrades and migrations to HANA On Premises and On Cloud.



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Protect Your Business, Control Your Processes

The SkyAPS™ Areas of Appliance:

Fraud

to increase the transparency of all SAP activities
by enhancing control upon business and
technical events and processes

to prevent unwanted outcomes and quickly
compensate the damage by diminishing the
consequences and restraining further risks

to identify fraud, reveal problems and
bottlenecks earlier, to protect against
cyber threats



Cyber

to gain visibility, agility, better
management, analysis and control of SAP
background jobs

SoD & Authorizations

to analyze and monitor your segregation of
duties, perform in-depth authorizations
analysis and inform you in real time about
corresponding suspicious activities

Protect Your Business, Control Your Processes

The SkyAPS™ Solutions Pool:

Skywind 4C™

to increase the transparency of all SAP activities
by enhancing control upon business and
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Skywind JAM™

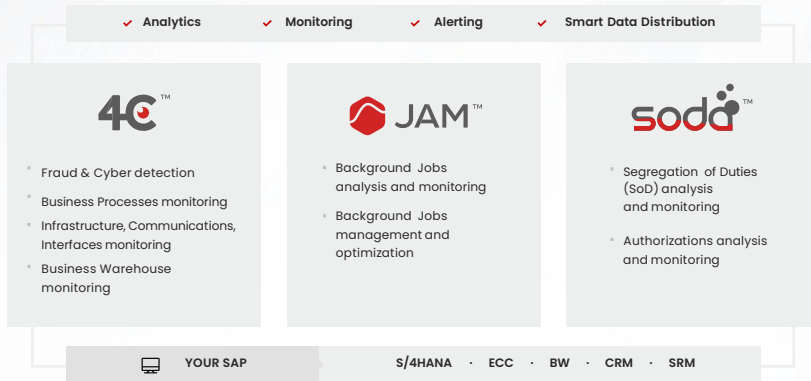
to gain visibility, agility, better
management, analysis and control of SAP
background jobs

Skywind SoDA™

to analyze and monitor your segregation of
duties, perform in-depth authorizations analysis
and inform you in real time about corresponding
suspicious activities

Solutions and Content

SKYWIND ANALYTICAL PLATFORM FOR SAP



SkyAPS™ Selected Customers




REPSOL

 **Gonvarri**
Industries

 **GRI** Renewable
Industries

 **ORMAT**

ISRAEL RAILWAYS 

 **Maccabi**
Healthcare Services



 **CHECK POINT™**

 **TADIRAN**


ASHDOD PORT
THE PORT OF ISRAEL

KETER

 **Tempo**

 **Rivulis**
Irrigation

 **Sonol**


BAZAN GROUP
OIL REFINERIES LTD


NTA

Solutions and Content

✓ **Business Disruptions and Bottlenecks**

Identify, prevent, eliminate or compensate problems and inefficiencies to ensure smooth business operations

✓ **Fraud Detection**

Proactively detect and prevent fraudulent activities within your SAP environment

✓ **Segregation of Duties**

Ensure clear role distinctions to prevent conflicts and unauthorized access

✓ **Compliance**

Maintain adherence to internal policies and external regulations effortlessly

✓ **Cybersecurity**

Strengthen your defenses against internal SAP cyber threats with advanced security tracking

✓ **Authorizations and Access Control**

Manage and monitor user permissions and activities to enhance security and compliance

✓ **Technical Infrastructure Hurdles**

Overcome technical SAP challenges with robust monitoring, observability, and optimization tools

✓ **No-Code, Tailor Made Report Generator**

Instant, automated, no-code, real-time SAP reporting

Products and Content

✓ **Skywind 4C™ Anti Fraud and Cyber Pack**
for ultimate SAP protection against cyber attacks and internal fraud

✓ **Skywind 4C™ Business Bottlenecks Pack**
for superior business control and
transparency

✓ **Skywind 4C™ Basis and Infrastructure Pack**
for continuous validation of SAP technical consistency and
performance

✓ **Skywind 4C™ Business Warehouse (BW) Pack**
for smooth BW operation and maintenance

✓ **Skywind 4C™ Generator**
for instant, no-code creation of your own controls and reports

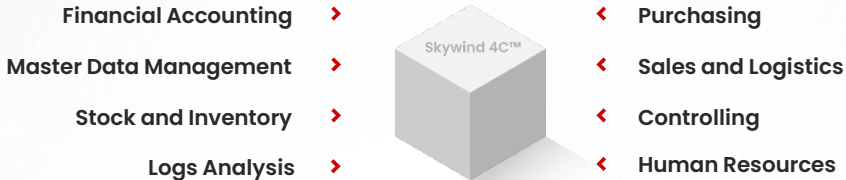
✓ **Skywind SoDA™ SoD and Authorizations Violations Analysis**
– to eliminate and prevent SoD violations and protection
against internal fraud

✓ **Skywind JAM™ SAP Background Jobs Analysis and Control**
to analyze, control and optimize all SAP Background Jobs
activities

✓ **Security and Administration App.**
Internal application for ultimate control of platform
usage

Skywind 4C™ Business Continuity Pack

for Smooth and Stable SAP Operation



› Instant, tailor made, no-code, automated, real-time SAP reporting by Skywind Generator™ ‹

01. Financial Accounting – process controls

EXAMPLES:



Exceptional postings by GL account

Financial statements unreliable for business decisions, leading to wrong strategic planning



Currency Rates Update Failed / Not Started

Wrong pricing in financial documents causes revenue loss and costly correction processes



Previous Period Postings

Month/year-end closing delays affect shareholder reporting and compliance deadlines



Parked Documents Aging

Late supplier payments damage vendor relationships and future procurement conditions



Incorrect Payment Terms (Contract vs. Financial Document)

Cash flow disruption affects operational funding and investment capabilities



Missing Document References (e.g. Invoice without PO)

Audit failures lead to compliance penalties and increased external audit costs

02. Master Data Management – process controls

EXAMPLES (by Vendor):



Goods / Invoice Receipt User Violations

Single user control of entire process enables theft through fake invoices



Bank Account Changes & Quick Reversal

Fraudulent / Incorrect payments drain working capital and trigger costly recovery procedures



Multiple Credential Changes

Unauthorized / Incorrect data changes enable payment fraud schemes and financial losses



Alternative Payee Assigned to a Vendor

Misdirected payments create disputes with vendors and delivery stops



Inactive / Rarely Used Vendor With Open Balance

Hidden liabilities surface unexpectedly, disrupting planned cash flow



One-Time Vendor Misuse

Bypass of vendor validation enables fraudulent payments and tax compliance issues

03. Stock and Inventory – process controls

EXAMPLES:



Missing Material Descriptions

Wrong material usage in production causes quality issues and recalls



Inappropriate Material Conversions

Inventory value manipulation possibly hides theft yet definitely affects production costing



Inventory Count Discrepancies

Production stops due to phantom stock, emergency purchases at premium cost



High Inventory Variances (booked vs. counted)

Write-offs affect profitability and trigger expensive stock reorganization



Material Price Fluctuations

Cost calculation errors lead to wrong pricing and margin erosion



Blocked Materials Usage

Production delays from using restricted materials trigger contract penalties

04. Purchasing – process controls

EXAMPLES:



Long-Open Purchase Orders

Capital tied in outdated commitments
blocks new strategic purchases



PO Creator Self-Approval

Fake purchases drain budget and create artificial
stock shortages



PO created retroactively

(after the date placed in Vendor's invoice)

Emergency purchases at premium prices erode
planned margins and budgets



PO vs. Invoice Terms Mismatch

Payment disputes freeze critical supplier deliveries



One-Time Vendor Overuse

Uncontrolled spending with unvetted suppliers risks
quality and delivery reliability



Over delivery tolerance in PO was changed

Since the Over delivery flag does not trigger a re-approval
process, there is a danger of misuse of this flag

05. Sales and Logistics – anti fraud controls

EXAMPLES:



Customer's credit limit was changed

Possible financial risk exposure



Billing Document Posting Failure

Revenue recognition delays affect company valuation and investor confidence



Zero Quantity Detection

System allows ghost orders affecting production planning and capacity



Missing Proof Of Delivery (POD) Confirmation

Revenue collection delays create cash flow gaps and banking covenant issues



Deliveries Not Billed After Goods Issue

Missing revenues create artificial cash flow crisis forcing expensive emergency financing



Sales Order Quantity Min/Max Violation

Misbehavior leading to possible money loss or fraud

06. Controlling and Profitability Analysis

EXAMPLES:



COPA Update Errors (CEERROR)

Wrong profitability analysis leads to incorrect strategic business decisions



Open Commitments

Hidden financial obligations surface unexpectedly disrupting budget planning



Settlement Rules Missing

Cost allocation failures create artificial profit/loss in business units



CO Internal Orders

Project cost tracking fails leading to budget overruns and wrong customer billing



Cost Center Reconciliation

Management reporting inaccuracies cause wrong operational decisions



Internal Pricing Issues

Transfer pricing errors create tax compliance risks and penalties

07. Human Capital Management

EXAMPLES:



Employee-User Link Missing

Ex-employee access remains active
creating security breach risks



Hiring Process Gaps

New employee productivity delayed by missing system
access and equipment



Position Changes

Wrong authorization assignments enable process
violations and fraud



Birthday/Anniversary Tracking

Employee engagement drops affecting
productivity and retention



Employee Events Tracking

Missing equipment returns and/or access revocations
create security gaps



Manager Notifications

Resource planning gaps create project
delivery delays



SAP Logs Monitoring Analysis

Detect anomalies, ensure system security, integrity

Potential Impact: SAP Operational
Efficiency and Business Disruptions

EXAMPLES:



SM20: Analysis of **Security Audit Log** - Details

Impact: unauthorized access attempts, suspicious transactions, user activity patterns, changes to sensitive data



SM20: Analysis of **Security Audit Log** - Anomalies

Impact: unauthorized access attempts, suspicious transactions, user activity patterns, changes to sensitive data (en masse)



SM21: Analysis of **Debugging Log** - Details

Impact: program execution, variable values, error messages, program flow, and potential debugging issues



SLG1: Analysis of **Application Log** - Details

Impact: potential processing bottlenecks, leading to delays in data transmission and potential system instability



SM21: Analysis of **System Log** - Details

Impact: system errors, warnings, performance issues, background job status, user logon/logout activities



SM21: Analysis of **System Log** - Anomalies

Impact: system errors, warnings, performance issues, background job status, user logon/logout activities (en masse)



SCU3: Analysis of **Change Log** (CDHDR / CDPOS)

Impact: changes made to critical data objects, including who made the changes, when they were made, and the old and new values, aiding in audit trails, compliance and data integrity maintenance



DB20: Analysis of **DBTABLOG**

Impact: detailed records of database table changes, including insertions, updates, deletions, and the associated user information, timestamps, and affected fields

06. Cyber Controls

EXAMPLES:



Login to the DIALOG user's system using a password and not by using Single Sign ON

Violation of secured Logon



Creating a DIALOG user by NOT authorized parties (not by Authorizations/Basis team)

Cyber related changes made to User Master



Any system update through DEBUG, performed by the SYSTEM / DIALOG user

Unacceptable and dangerous action



Activation of critical SAP Business / Technical processes via transactions

Unsecured transaction start



Activating transactions by unauthorized DIALOG users

Successful run of a transaction even when a user is not authorized to activate it



Notification of granting/receiving critical authorization (e.g., SAP_ALL/SAP_NEW)

Potential to a malicious, unauthorized grant of critical rights in the SAP system

Integration with SOC / SIEM Platforms

Enable SAP insights within your Security Operation Center (SOC)

BENEFITS: Pushes pre-filtered SAP data instead of raw logs, dramatically reducing SIEM processing costs while providing laser-focused security insights.

PROTOCOLS:



Syslog Protocol

Centralized Logging: Centralize logs from various devices, systems, and software applications into a single repository.

Security Monitoring: Used in security information and event management (SIEM) systems



Web Services

Use Case: Synchronize data flows between SAP and Non-SAP systems such as CRM, eCommerce platforms, or custom databases.

Benefit: Ensures consistency and accuracy of data across different systems, improving operational efficiency and reducing errors.



Files Transfers

Impact: Interruptions or errors in file transfers can lead to data loss, incomplete data records, and compliance risks, especially in data-driven decision-making environments

SUPPORTED PLATFORMS:



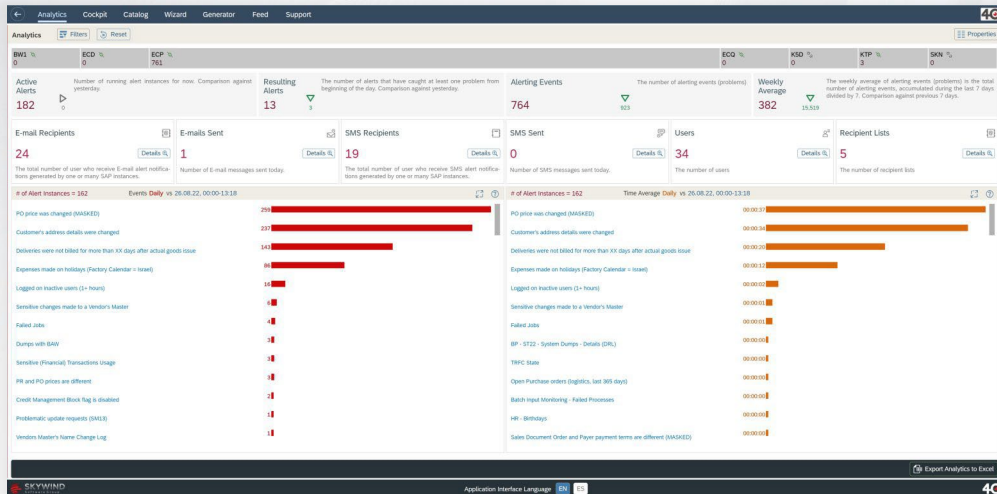
SkyAPS™ Alerting Cockpit

Analytics Cockpit Catalog Wizard Generator Feed Support											
Cockpit Filters Reset # of Active Alert Instances = 67 Hierarchy Table											
+ - 10.05.24, 00:00 - 10.05.24, 15:16 # of Alert Instances after filtering = 67											
NEW UPDATED	Source system	Summary	Last run	Activity	Severity	Scheduling	Mode	Email	SMS	Specifications	
Category, Subcategory, Alert Description	ERP1, ERP2, ERT, SKN										
> Applications	9										
> Cybersecurity	3										
> Master Data	2										
> Basis Critical	44										
> Background Jobs	3										
> Server Resources	15										
> Anomalies	9										
SM12 Check for Old Locks (10+ hours)	ERP2	18	18			8 hours		1			
SM13 More than 20 requests have failed in 20 minutes On SAP App1	ERP1	0	0			10 minutes		3			
SM13 More than 20 requests have failed in 20 minutes On SAP App2	ERP2	0	0			10 minutes		3			
More than 20 dumps occur during the last 1 hour in ERP2	ERP2	0	0			5 minutes		2			
Long Running Background Jobs > 24 h	ERP1	0	0			1 hours		1			
Long Batch Input Monitoring - (90+ Minutes)	ERP1	0	0			1 days					
More than 20 dumps occur during the last 1 hour in ERP1	ERP1	0	0			5 minutes		2			
More than 10 jobs have failed in less than 10 minutes	ERP1	0	0			5 minutes		1			
20+ IDOCs have failed in 10 minutes	ERP2	0	0			15 minutes		1			
> Communication	7										
> Miscellaneous	6										
> Connectivity	4										
SAP-Prod - RFC Connection Ping - Availability between Servers to Skywind	SKN	0	0			5 minutes		2			
SAP-Prod - RFC Connection Ping - Availability - All Env. Up and Running	ERP1	0	0			5 minutes		2			
SAP-Prod - Can't log on into the system	SKN	0	0			5 minutes		3			
qRFC - Inbound queue count > 100	ERP1	0	0			1 hours		1			
> System	9										

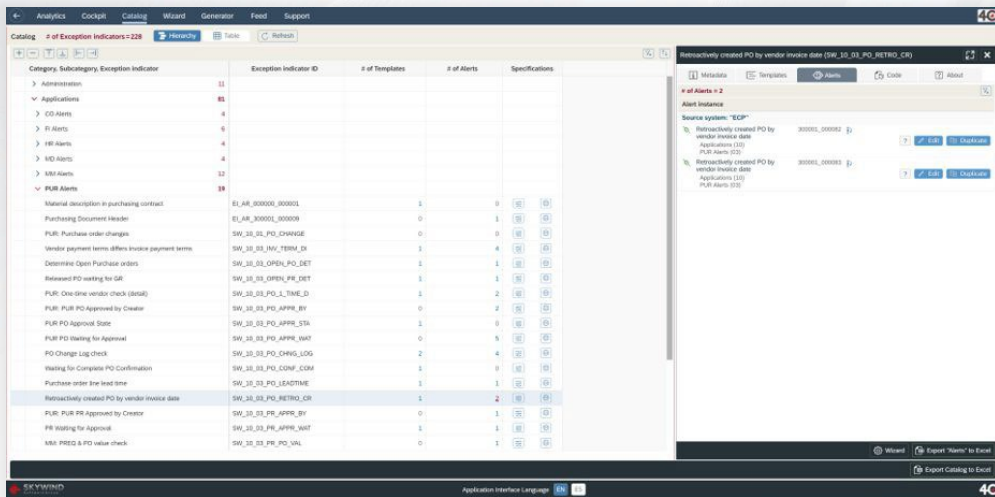
Skywind 4C™ Notification Output (some fields are masked)

Analytics Cockpit Catalog Wizard Generator Feed Support											
PO price was changed (MASKED) (200010_000168)											
Metadata Scheduling Email SMS Summary History Code About											
Metadata Parameters Format output Data											
# of Hits=259											
Execution Time	Vendor	Vendor Name	Purchasing Document	PO Item	Material	Changed by	Company Code	Date	Purch. Doc. Category	Old value	New value
26.08.2022, 01:30:11	202620	MFCB6ouEFAMsiQjWG6ou6FAAAAAAAAAA	PwtoFrxh	mu27	51202310000	GALD	1	2022/08/21	F	1130.00	9122.00
26.08.2022, 01:30:11	108580	UooJkpiCALx+ BIR35+ AAAAA	Oo1mkXwsK	mu27	51601333600	GALD	1	2022/08/16	F	36.56	156.87
26.08.2022, 01:30:11	202551	A0wCnIW+CAv6vM5yVyx7AAAAA	2XdsrNBC	mu27	51601840030	GALD	1	2022/08/18	F	0.68	9.82
26.08.2022, 01:30:11	104740	TchQnC9n2uTAX2vOv83DTAA	JFY29N2H	mu27	51604668601	GALD	1	2022/08/25	F	75.00	112.50
26.08.2022, 01:30:11	104740	TchQnC9n2uTAX2vOv83DTAA	JFY29N2H	qVjp	51604668601	GALD	1	2022/08/25	F	75.00	112.50
26.08.2022, 01:30:11	203669	zQ3FYuukJQC7d5eEaAAAA	fDvnxP4V	mu27	51601461500	GALD	1	2022/08/23	F	68.40	66.45
26.08.2022, 01:30:11	201003	zLrH2Hb-9UGwQeUuAAAAA	8uVP6eINB	mu27	51303072105	ROTEMZ	1	2022/08/24	F	13448.00	13488.00
26.08.2022, 01:30:11	203254	Y60c7z0exIX5XvF9vR1AAAAA	TX0AgkngY	mu27	51203484600	GALD	1	2022/08/24	F	670.00	3103.00
26.08.2022, 01:30:11	203254	Y60c7z0exIX5XvF9vR1AAAAA	EyM+7qlQ	qVjp	51203481100	GALD	1	2022/08/24	F	915.00	3348.00
26.08.2022, 01:30:11	203254	Y60c7z0exIX5XvF9vR1AAAAA	EyM+7qlQ	mu27	51203482900	GALD	1	2022/08/24	F	670.00	3103.00
26.08.2022, 01:30:11	203254	Y60c7z0exIX5XvF9vR1AAAAA	TX0AgkngY	qVjp	51203484300	GALD	1	2022/08/24	F	915.00	3348.00
26.08.2022, 01:30:11	203254	Y60c7z0exIX5XvF9vR1AAAAA	d8zv5r5G	mu27	51203482900	GALD	1	2022/08/24	F	670.00	3103.00
26.08.2022, 01:30:11	203113	CgthM06nLc5V7GIMF5DAAAAA	V68RmBzm	mu27	T-RBC-AMS41E	TAMARS	1	2022/08/23	F	28.60	25.17
26.08.2022, 01:30:11	203113	CgthM06nLc5V7GIMF5DAAAAA	fGmcDzff	SMtz	T-MMK-UP0091HPL-E	TAMARS	1	2022/08/23	F	229.80	179.24
26.08.2022, 01:30:11	203113	CgthM06nLc5V7GIMF5DAAAAA	fGmcDzff	SMtz	T-MMK-UP0091HPL-E	TAMARS	1	2022/08/23	F	179.24	229.80
26.08.2022, 01:30:11	203113	CgthM06nLc5V7GIMF5DAAAAA	mH7O+R8m	qVjp	T-RBC-AMS41E	TAMARS	1	2022/08/23	F	28.60	25.17
26.08.2022, 01:30:11	203113	CgthM06nLc5V7GIMF5DAAAAA	X-Eg+htvu	qVjp	T-RBM-A201VAE	TAMARS	1	2022/08/23	F	181.10	126.77
26.08.2022, 01:30:11	203113	CgthM06nLc5V7GIMF5DAAAAA	V68RmBzm	lfe	T-RBM-HY2083E	TAMARS	1	2022/08/23	F	106.00	89.04
26.08.2022, 01:30:11	203113	CgthM06nLc5V7GIMF5DAAAAA	wu8M0Ev5	d8Fw	T-RBM-HY2083E	TAMARS	1	2022/08/23	F	106.00	89.04
26.08.2022, 01:30:11	203113	CgthM06nLc5V7GIMF5DAAAAA	N3mOH4-I	GTPQ	T-RBM-HY2083E	TAMARS	1	2022/08/23	F	106.00	89.04
26.08.2022, 01:30:11	203113	CgthM06nLc5V7GIMF5DAAAAA	fGmcDzff	mu27	T-MMK-UP0301HP-E	TAMARS	1	2022/08/23	F	404.10	315.19
26.08.2022, 01:30:11	203113	CgthM06nLc5V7GIMF5DAAAAA	MNUnkmpCW	mu27	T-RBM-HY1083E	TAMARS	1	2022/08/23	F	90.30	79.46

Skywind 4C™ Analytical View



Skywind 4C™ – Templates Catalog



The screenshot displays the Skywind 4C Templates Catalog interface. The main window shows a list of templates categorized by exception indicators. The right sidebar provides a detailed view of a selected template, including its metadata, alert instances, and source system information.

Navigation: Analytics, Cockpit, Catalog (selected), Wizard, Generator, Feed, Support

Catalog Summary: # of Exception Indicators = 228

Table Columns: Category, Subcategory, Exception Indicator, Exception Indicator ID, # of Templates, # of Alerts, Specifications

Category, Subcategory, Exception Indicator	Exception Indicator ID	# of Templates	# of Alerts	Specifications
Administration	11			
Applications	81			
CO Alerts	4			
FI Alerts	6			
FR Alerts	4			
MD Alerts	4			
MI Alerts	12			
PUR Alerts	19			
Material description in purchasing contract	EL_AR_000000_000001	1	0	
Purchasing Document Header	EL_AR_000001_000009	0	1	
PUR: Purchase order changes	SW_30_03_PO_CHANGE	0	0	
Vendor payment terms differs invoice payment terms	SW_30_03_INV_TERM_D	1	4	
Determine Open Purchase orders	SW_30_03_OPEN_PO_DET	1	1	
Released PO waiting for GR	SW_30_03_OPEN_FR_DET	1	1	
PUR: One-time vendor check (detail)	SW_30_03_PO_1_TIME_D	1	2	
PUR: PUR PO Approved by Creator	SW_30_03_PO_APPR_BY	0	2	
PUR PO Approval State	SW_30_03_PO_APPR_STA	1	0	
PUR PO waiting for Approval	SW_30_03_PO_APPR_WAT	0	5	
PO Change Log check	SW_30_03_PO_CHNG_LOG	2	4	
Waiting for Complete PO Confirmation	SW_30_03_PO_CONF_COM	1	0	
Purchase order line lead time	SW_30_03_PO_LEADTIME	1	1	
Retrospectively created PO by vendor invoice date	SW_30_03_PO_RETRO_CR	1	2	
PUR: PUR PR Approved by Creator	SW_30_03_PR_APPR_BY	0	1	
PR Waiting for Approval	SW_30_03_PR_APPR_WAT	1	1	
MI: PREQ & PO value check	SW_30_03_PR_PO_VAL	0	1	

Retrospectively created PO by vendor invoice date (SW_30_03_PO_RETRO_CR)

Alert Instance

Source system: "ECP"

Alert Instance

Retrospectively created PO by vendor invoice date
Applications (10)
PUR Alerts (2)

Retrospectively created PO by vendor invoice date
Applications (10)
PUR Alerts (2)

Navigation: Metadata, Templates, Alerts (selected), Code, About

Footer: Application Interface Language: EN | 4C

Skywind 4C™ – Create Your Own Content (no-code)

←

Analytics

Cockpit

Catalog

Wizard

Generator

Feed

Support

4C

Generator

⇒ ECP (ECP)

⇒ Source: "EKBE (ABAP Table or View)"

⇒ Create Alert Instance

1. Basic Settings

2. Selected Fields

3. Currency Conversion

4. External Parameters

5. Key For Delta

6. Documentation

+

New data entry

Source system*

① ECP

Language*

① English

Source type*

① ABAP Table or View

Source name*

① EKBE

Description*

① History per Purchasing Document

⊗

Category*

① Live Demo specific developments

⌵

Subcategory*

General

⌵

↓

Retrieve

Local structure

① ZSW5_ARG_300001_000014

Function module

① ZSWF_ARG_300001_000014

Exception indicator

① EI_AR_300001_000014

Alert instance

⚙️ ①

Skywind 4C™ Alert Generator purpose:

Skywind 4C™ Alert Generator (shortly - AG) is designed as a self service module, allowing to instantly convert client's business logic, implemented via various SAP entities into alerts and reports. The entities can be SAP standard or Z* based (developed in house).

The list of the entity types, which can be used by AG as sources includes:

- HANA Calculation View, converted to ABAP external view.
- ABAP Repository Table (e.g. KNA1, MARA etc.).
- ABAP View (any database view, existing in ABAP dictionary, including ABAP Views, based on HANA Calculation Views).
- ABAP Function Module (should be compliant with Skywind 4C™ API). AG will automatically validate compatibility of an FM to Skywind 4C™ API requirements.

Help

Validate

Generate

SKYWIND

Application Interface Language

EN

US

4C

Realise Tangible Benefits



Save Time

Reduce manual effort through an automated business rule engine.



Increase Protection

Prevent fraud with proactive alerts and comprehensive insights.



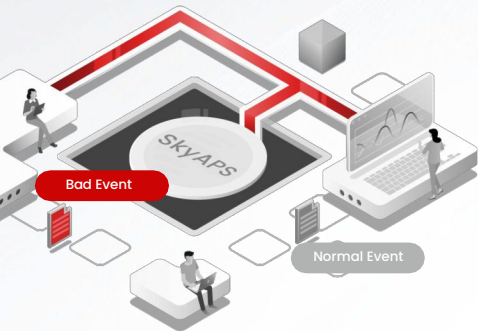
Save Money

Optimize the way you do business by identifying process bottlenecks or violations.



Complete Coverage

Search your entire transactions database versus only a sample achieved during an audit.



To Conclude...

Our software continuously checks the validity of the processes by catching “bad” or “about to become bad” events. Sophisticated data distribution mechanisms seamlessly and securely distribute critical info to the right audiences.



When mission critical data will start flowing securely, yet seamlessly across all organizational levels, timely reaching key users... only then will your company start a journey to the real Business Transformation.



The Science of Data.
The Art of Business.

INFO@SKYWIND.COM

WWW.SKYWIND.COM