

Functions and Features in Data Protection in SAP S/4HANA for GDPR and CCPA

SEC203

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Personal disclaimer

SAP does not provide legal advice.

The implementation of data protection requirements at any data controller is a complex challenge with interdependent legal and technical aspects. The responsibility to identify and implement adequate technical features remains with the controller with regard to the organizational aspects.

The following presentation is only about technical features that might in that sense help a controller in achieving compliance with data protection regulations.

To help the audience understand the shown approach, in-context information is provided without claiming completeness or correctness.

Agenda

EU GDPR – Presenter's view Processing of personal data

- Legal basis
- Considerations

Rights of the data subject

- Legal basis
- Considerations

Security safeguards

Considerations

Purpose differentiation

- Line organizational attributes
- Process organizational attributes

California Consumer Privacy Act (CCPA) – Presenter's View California Consumer Privacy Act (CCPA) – Consumer Rights SAP Business Suite and SAP S/4HANA – Some technical features

- Simplified blocking and deletion
- Information retrieval framework
- Read Access Logging

SAP Cloud Platform – Data Retention Manager

SAP Cloud Platform Data Retention Manager



EU GDPR – Presenter's view



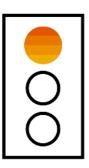
Data protection is simple!

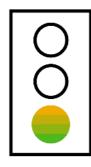
Processing of personal data is forbidden ...



Data protection is simple!

Processing of personal data is forbidden ...





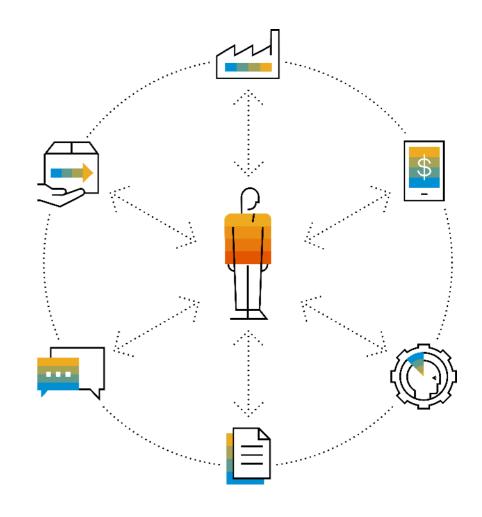
- ... as long as no justifying reason is given, such as:
- Contract
- Other legal reasons (allowing or enforcing the processing)
- The data subject has given his/her unambiguous consent

Personal data

Definition

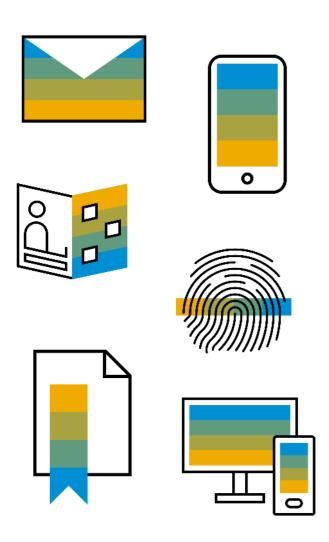
'Personal data' means any information relating to an identified or identifiable natural person ('data subject'); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person

Article 4(1) European Union General Data Protection Regulation (EU GDPR)



Personal data

Definition



Information that identifies individuals in terms of making them directly addressable or contactable:

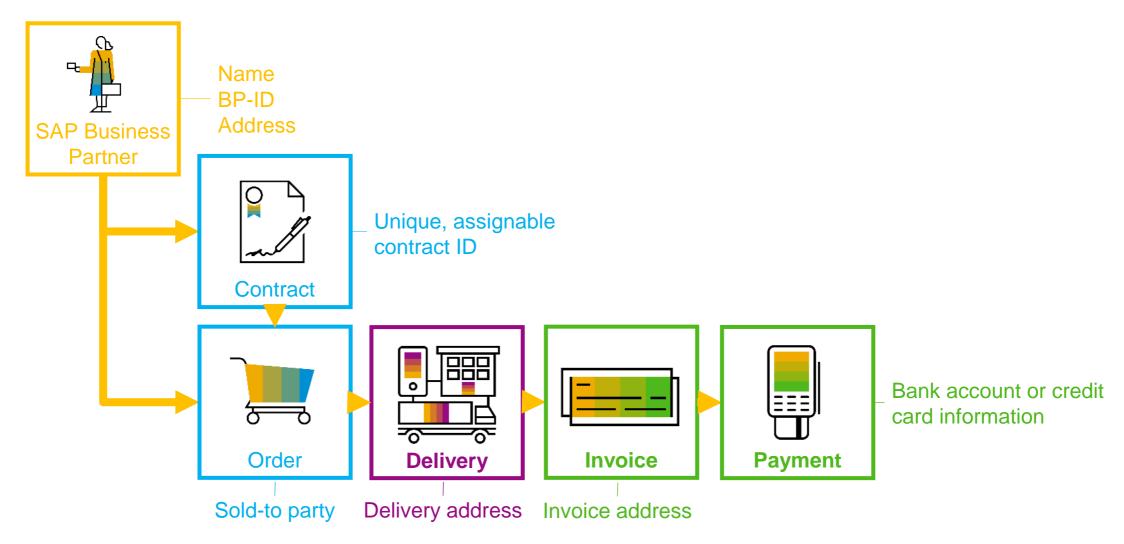
- Name
- Postal address
- Telephone number
- Email address, etc.

Information that contains identifiers that enable someone indirectly to connect to an individual:

- National identifiers
- IP addresses
- MAC addresses
- License-plate numbers
- Membership numbers, etc.

Personal data

Examples of personal data in SAP Business Suite and SAP S/4HANA



Data subject, data controller, data processor

Definitions

Data subject:

 A natural person (Austria: legal persons as well) to whom the personal data relates

Data controller:

 A natural or legal person, public authority, agency or any other body that determines purposes and means for processing personal data – other than persons who use data for personal purposes

Data processor:

 A natural or legal person, public authority, agency or any other body that processes personal data on behalf of and in accordance with the instructions of the controller E.g.: Employee - D0XX234



E.g.: ABC Corp. Ltd.



Data Processing on behalf

E.g.: SAP Travel on Demand

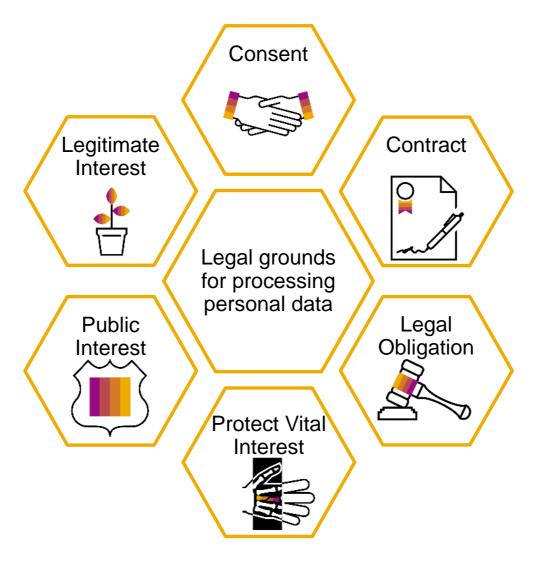


Processing of personal data



Processing of personal data

Legal basis



Processing of personal data

Considerations

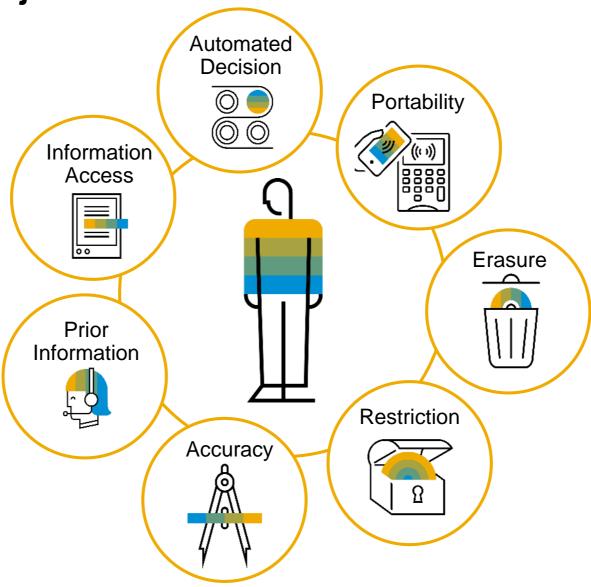
	Content	Possible technical feature?			
Consent	Where processing is based on the data subject's consent, the controller should be able to demonstrate that the data subject has given consent to the processing operation. (Recital 42, sentence 1, EU GDPR)	Proof of consent is basically an organizational measure, however, the impact on data processing in an SAP ERP system needs to be considered. Each platform will offer a local consent feature if required for the specific purpose. For example: Marketing Permissions in SAP CRM Consent Administration in SAP S/4HANA SAP Cloud Platform Consent Repository SAP Customer Consent offers an enterprise consent solution to centralize consent management.			
Contract	Processing should be lawful where it is necessary in the context of a contract or the intention to enter into a contract. (Recital 44, EU GDPR)	The proof of a contract is basically an organizational measure, however, an SAP ERP system handles data documenting contracts: The existence of a contract itself is documented by corresponding documents and postings As a supporting solution for documentation, SAP GRC might be considered			
Legal Obligation	ERP-based examples: Tax reporting, income tax reporting, reporting for social insurance				
Protect Vital Interest	The processing of personal data should also be regarded to be lawful where it is necessary to protect an interest which is essential for the life of the data subject or that of another natural person. (Recital 46, sentence 1, EU GDPR)				
Public Interest	Where processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority, the processing should have a basis in Union or Member State law. (Recital 45, sentence 1, EU GDPR)	These are all organizational measures - As a supporting solution for documentation, SAP GRC might be considered			
Legitimate Interest	Proving a legitimate interest is subject to a careful legal consideration whether "fundamental rights and freedoms of the data subject" are not overriding such an interest. (Recital 47, EU GDPR)				

Rights of the data subject



Rights of the data subject

Legal basis



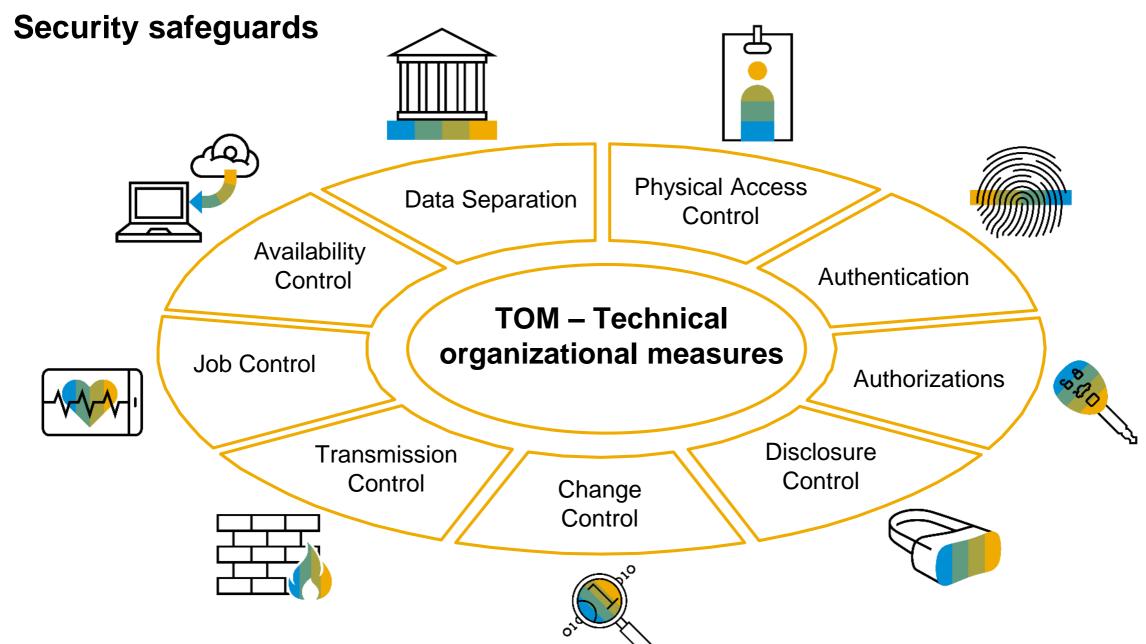
Rights of the data subject

Considerations

	Content	Possible technical feature?				
Information to be provided	Information to the data subject on the data undergoing processing, the data controller, the purpose, and the retention policies.	This information is an organizational measure and not a technical feature. SAP's information retrieval framework				
Information Access	The data subject's right to get information on the data undergoing processing concerning them.	All personal data in SAP Business Suite is available for reporting in application-specific reports. Central reporting is currently possible using AIS and the new transaction SE165 SAP's information retrieval framework				
Accuracy	Personal data has to be true and to be corrected (latest after request).	Simple standard functionality (Change Functionality in Master Data and Documents)				
Erasure: Deletion/ Blocking	The ability to delete personal data when all retention periods have passed. The ability to block personal data as soon as the primary purpose has passed and the residence time has elapsed.	SAP introduced the concept of simplified blocking and deletion. SAP Information Lifecycle Management Data Controller Rule Framework End-of-purpose checks Blocking indicators				
Portability	The right of the data subject to receive his personal data in a structured, commonly used, and machine-readable format.	All tools named under Information Access provide download functionality. The challenges here are missing international standards and the complexity of personal data in business.				
Restriction of Processing	The data subject has the right to obtain from the controller restriction of processing in certain cases.	Subject to the blocking and deletion functionality				
Automated Decisions	The data subject has the right that any automated decision can become subject to manual interference.	Any features providing such capabilities ensure that such decisions can get overruled manually.				

Security safeguards





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Security safeguards

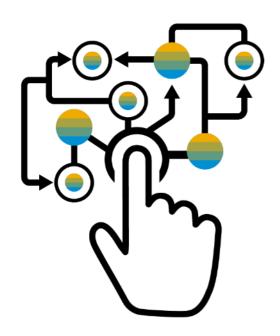
Considerations

	Content	Possible technical feature?		
Physical Access Control	Prevent unauthorized persons from gaining access to data processing systems with which personal data is processed or used	Such controls are not usually the subject of SAP solutions. For example, badges		
Authentication	Secure procedures to enable system access based on personal authentication	Strict password policies, segregation of duties, SAP Single Sign-On, two-factor authentication		
Authorizations	Procedures allowing the differentiation of which data can be accessed and in which mode	Standard authorization concepts		
Disclosure Control	Ability to document all access to personal data	Read Access Logging (RAL) available		
Job Control	Data Controller has to ensure that the data processor is following his instructions and guidelines. This organizational task has some technical aspects like system audit	Standard system audit		
Data Separation	Personal data collected for a specified purpose must be separated from personal data collected for other purposes	Compliant master data structures and organization structure		

Purpose differentiation Using organizational structures



Using organizational structures



Every operation should be based on a specific purpose and it should be possible to prove and establish this association in the system. A purpose could be the sale of a product or providing a service, for example.

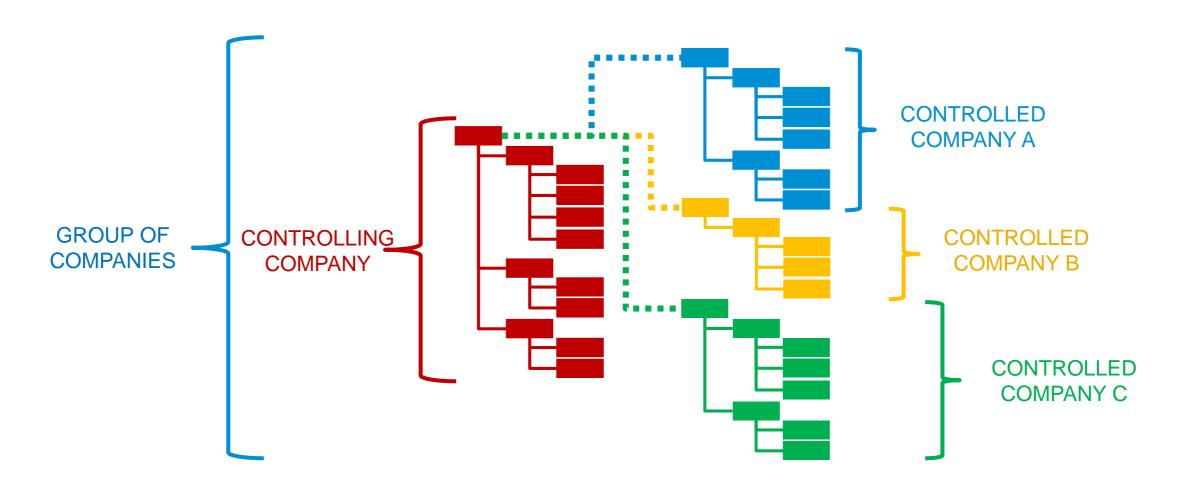
It should be possible to prove:

- The purpose for processing data (the why)
- The entity responsible for processing data (the who)

To achieve this, data should be linked to attributes reflecting:

- The purpose (the why)
- Line organizational attributes and process organizational attributes (the why and who)

An example of a group of companies



Line organizational attributes

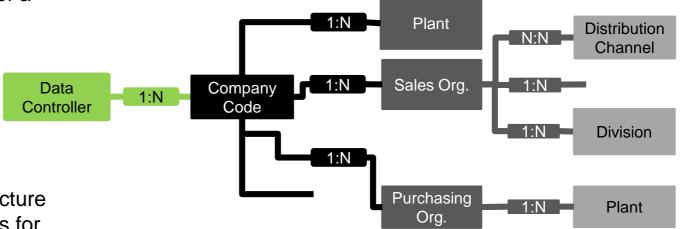
Attributes reflecting the line organization are called line organizational attributes (LOA).

A data controller is mentioned in Article 4(7) EU GDPR as the entity that decides the purpose of processing data.

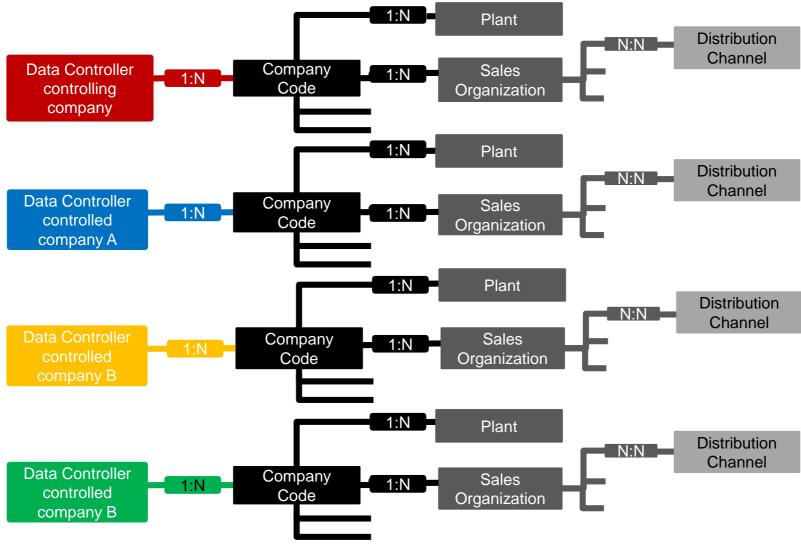
Any legal entity in the organizational structure (common example: Company code) could take the logical role of a data controller.

A data controller should be uniquely identifiable for a certain purpose of processing.

SAP provides a Data Controller Rule Framework to address certain aspects of data protection like data erasure. Creating a well-balanced organizational structure would also allow the creation of distinct retention rules for blocking and deleting data.

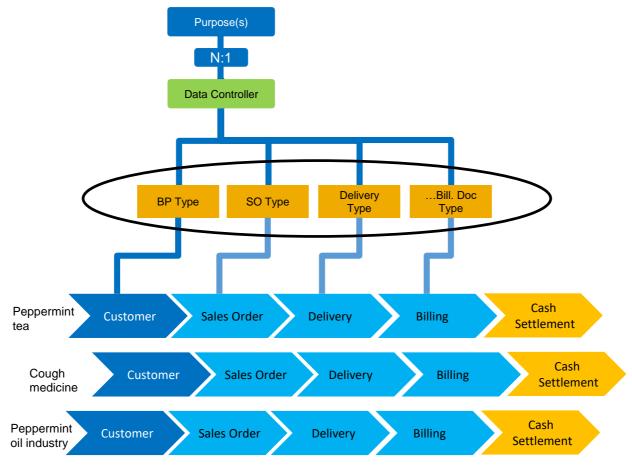


LOA model for the given example (a simple view)

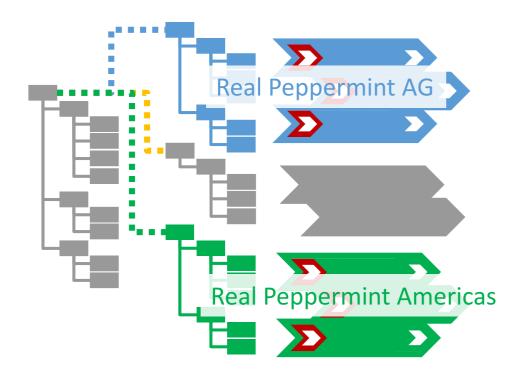


Process organizational attributes

Attributes reflecting the process flow (process organization) are called *process organizational* attributes (POA).



Example: Real Peppermint



Example: A group of companies with two businesses in two countries (Germany and North America):

- 1. Sales of peppermint tea
- 2. Sales of cough medicine

Real Peppermint AG

Company Code 1000 has 2 Sales organizations

- Sales Org: 1000 Sells cough medicine
- Sales Org: 1100 Sells peppermint tea

Real Peppermint Americas

Company Code 2000 has 1 Sales organization

• Sales Org: 2000 – Sells cough medicine and peppermint tea Different sales order types could be used to demarcate purpose of sales orders.

Example: Bringing LOA and POA together

Purpose	Business Partner		Sales Order		Delivery		Billing	
	LOA	POA	LOA	POA	LOA	POA	LOA	POA
Cough medicine sales, Real Peppermint AG	Comp. Code 1000	BP_TYPE '1'	Sales Org. 1000	Sales Order Type "1"	Sales Org. 1000	Delivery Type "1"	Comp. Code 1000	Billing type "1"
Peppermint tea sales, Real Peppermint AG	Comp. Code 1000	BP_TYPE '1'	Sales Org. 1100	Sales Order Type "1"	Sales Org. 1100	Delivery Type "1"	Comp. Code 1000	Billing type "1"
Cough medicine sales, Real Peppermint Americas	Comp. Code 2000	BP_TYPE '1'	Sales Org. 2000	Sales Order Type "1"	Sales Org. 2000	Delivery Type "1"	Comp. Code 2000	Billing type "1"
Peppermint tea sales, Real Peppermint Americas	Comp. Code 2000	BP_TYPE '1'	Sales Org. 2000	Sales Order Type "2"	Sales Org. 2000	Delivery Type "2"	Comp. Code 2000	Billing type "2"

Just as an example: The two companies (company codes 1000 and 2000) could do it differently, but in the end still maintain distinct purposes using line organizational attributes and process organizational attributes.

California Consumer Privacy Act (CCPA)

- Presenter's view



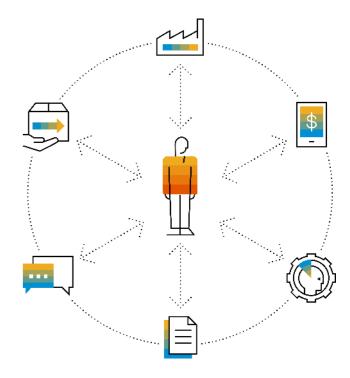
Personal Information (PI)

Definition

Personal information" means information that identifies, relates to, describes, is capable of being associated with, or could reasonably be linked, directly or indirectly, with a particular consumer or household.

Personal information includes, but is not limited to, the following:

- (A) Identifiers such as a real name, alias, postal address, unique personal identifier, online identifier Internet Protocol address, email address, account name, social security number, driver's license number, passport number, or other similar identifiers.
- (B) Any categories of personal information described in subdivision (e) of California Civil code sec 1798.80
- (C) Characteristics of protected classifications under California or federal law.
- (D) Commercial information, including records of personal property, products or services purchased, obtained, or considered, or other purchasing or consuming histories or tendencies.
- (E) Biometric information.
- (F) Internet or other electronic network activity information, including, but not limited to, browsing history, search history, and information regarding a consumer's interaction with an Internet Web site, application, or advertisement.
- (G) Geolocation data.
- (H) Audio, electronic, visual, thermal, olfactory, or similar information.
- (I) Professional or employment-related information.
- (J) Education information, defined as information that is not publicly available personally identifiable information as defined in the Family Educational Rights and Privacy Act (20 U.S.C. section 1232g, 34 C.F.R. Part 99).
- (K) Inferences drawn from any of the information identified in this subdivision to create a profile about a consumer reflecting the consumer's preferences, characteristics, psychological trends, preferences, predispositions, behavior, attitudes, intelligence, abilities, and aptitudes.
- (2) "Personal information" does not include publicly available information. For these purposes, "publicly available" means information that is lawfully made available from federal, state, or local government records, if any conditions associated with such information. "Publicly available" does not mean biometric information collected by a business about a consumer without the consumer's knowledge. Information is not "publicly available" if that data is used for a purpose that is not compatible with the purpose for which the data is maintained and made available in the government records or for which it is publicly maintained. "Publicly available" does not include consumer information that is deidentified or aggregate consumer information



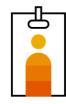
Business

Definitions

A legal entity (company, partnership...) that operates for profit, collects PI, determines (alone or jointly with others) purposes and means of processing of consumers PI, that does business in CA and

- has an annual gross revenue > 25 million dollars OR
- deals with PI of 50,000 or more consumers, households or devices OR
- derives 50% of its revenue by selling PI

E.g.: Employee - D0XX234



E.g.: ABC Corp. Ltd.



Data Processing on behalf

E.g.: SAP Travel on Demand

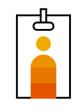


Consumer

Definitions

"Consumer" means a natural person who is a California resident, as defined in Section 17014 of Title 18 of the California Code of Regulations, as that section read on September 1, 2017, however identified, including by any unique identifier.

E.g.: Employee – D0XX234



E.g.: ABC Corp. Ltd.



Data Processing on behalf

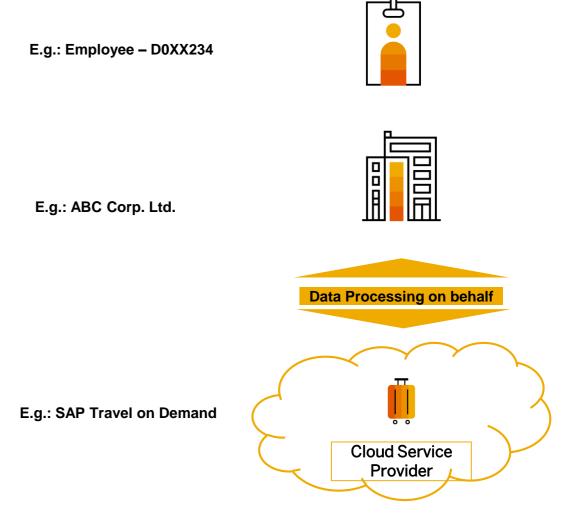
E.g.: SAP Travel on Demand



Service Provider

Definitions

"Service provider" means a sole proprietorship, partnership, limited liability company, corporation, association, or other legal entity that is organized or operated for the profit or financial benefit of its shareholders or other owners, that processes information on behalf of a business and to which the business discloses a consumer's personal information for a business purpose pursuant to a written contract, provided that the contract prohibits the entity receiving the information from retaining, using, or disclosing the personal information for any purpose other than for the specific purpose of performing the services specified in the contract for the business, or as otherwise permitted by this title, including retaining, using, or disclosing the personal information for a commercial purpose other than providing the services specified in the contract with the business.



California Consumer Privacy Act (CCPA)

Consumer Rights



Right 1: Right to information

1798.100 (a) Tell me what information you collected from me

- Categories of personal information
- Specific pieces of personal information

1798.100 (b) Business to provide advance information

- Categories of personal information
- For what purpose

1798.110 (a) Tell me about PI collected from other sources

- Categories of personal information collected
- Categories of sources
- Purpose for which it is collected or sold
- Categories of third parties with whom the business shares PI
- Specific pieces of PI collected about consumer.

Last 12 months!

Right 2: Right to request deletion

1798.105 (a) Delete my personal information

1798.100 (b) Business to delete data and direct service providers to do so!

Unless:

- There are reasons not to (as stated in the act) some examples: - comply with legal obligations,

- complete a transaction

Right 3: Right to request information about sale or disclosure of PI

1798.115(a) A consumer shall have the right to request that a business that sells consumer's PI, or that discloses it for a business purpose, disclose the following to the consumer:

- Categories of personal information collected about the consumer
- Categories of PI the business sold and Categories of third parties to whom PI was sold, by category/ies of PI for each third party.
- Categories of PI disclosed by a business for business purpose.

Sale ≠ Disclose

Last 12 months

2 separate lists

Right 4: Right to opt-out of sale of PI

1798.120(a) A consumer shall have the right to opt–out of sale of their Personal information.

1798.120(d) Opt-in needed before sale of information of consumers < 16 yrs. of age.

- 'Do not sell my personal information' link
 - Next 12 months at least
 - Ask again

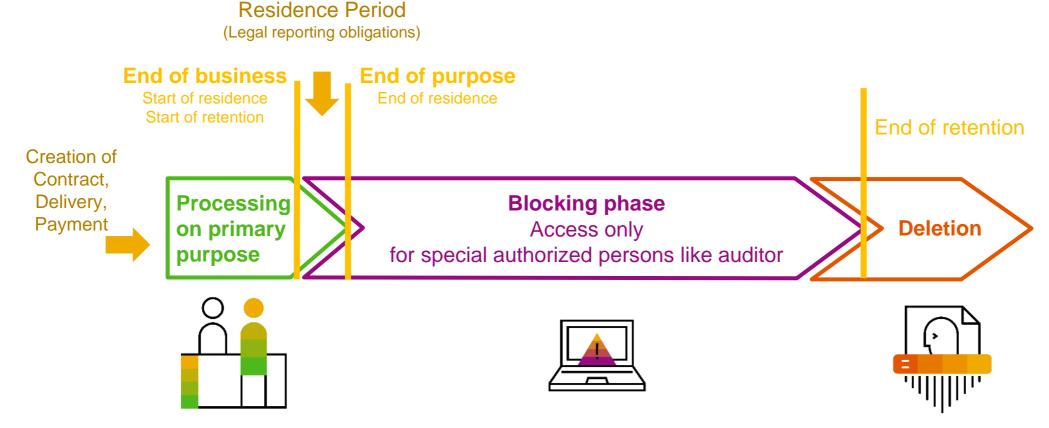
SAP Business Suite and SAP S/4HANA

Some technical features – Simplified Blocking and Deletion



Simplified Blocking and Deletion

Lifecycle of Personal Data



Requirement:

Personal data that is **no longer needed for the primary processing purpose** must be **deleted** unless there are other **retention periods** defined by law or contract; in that case, it has to be **blocked**.

Simplified Blocking and Deletion

Examples of personal data



Contract of employment

Working student (April 2011 – March 2014)

Communication

+49 610 9607207

Portal account: CarlaJoh

Contract for work:

Targeted marketing with Beacons and Geofencing (December 2015)



Carla Johnson

Oaktree Road 1 39761 Berlin

Ordered items

- iPhone + Service contract (March 2015)
- The Divine Comedy Alighieri, D: (January 2016)

Payment condition

Allcreditbank

IBAN: DE12500903170648489890

Type of business relationship

Processing purposes?

- Obviously there are different business relationships with Carla Johnson that cause different residence and retention periods
- The different business relationships also mean that there are different processing purposes to consider
- In many cases, the processing purpose of master data is dependent on other data processing purposes





Simplified blocking and deletion





	Processing purpose	Processing	Blocking
Master data	Dependent on other processing purposes	With related data	Until end of purpose of all related data → in this example, probably pension legislation
Payment data	Dependent on other processing purposes	With related data	Until end of purpose of all related data → in this example, probably tax legislation
Communication data	Dependent on other processing purposes	With related data	Factual with master data
Marketing	Marketing	Until revocation of consent or missing renewal after x years	None
Sales contract data iPhone & service	Processing sales contract Processing service contract	Up to end of service contract rights	Until end of purpose of all related data → such as tax legislation
Sales contract data "The Divine Comedy"	Processing sales contract	During processing of sales contract, if necessary, reporting purposes	Until end of purpose of all related data → such as tax legislation
Data contract for work	Processing contract for work	During processing of contract for work, if necessary, reporting purposes	Until end of purpose of all related data → such as contract legislation
Data contract of employment	Processing employment relationship	During employment relationship and processing of termination	Attention: Periods of pensions, health insurance, health and safety,

SAP Business Suite and SAP S/4HANA

Some technical features – Information Retrieval Framework



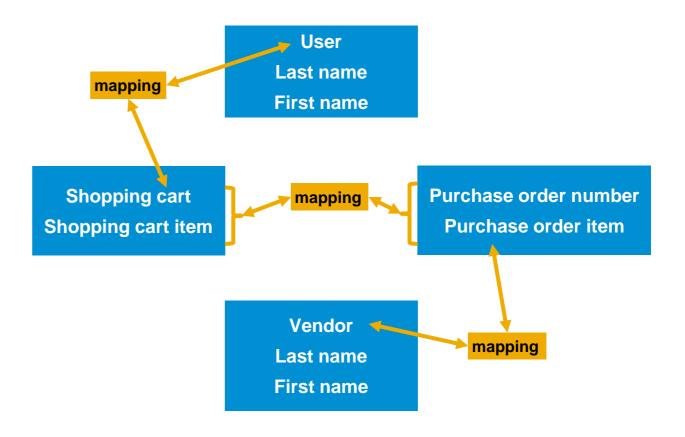
Collecting personal data



Personal data are stored:

- In the database
- In fields of tables
- Connected via fields

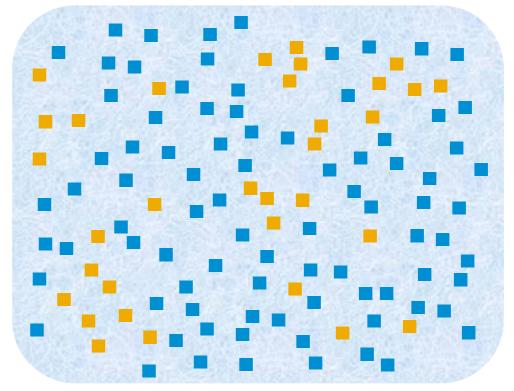
Some tables **belong together** (for example: address data is stored in multiple tables)



Overview

Based on SAP ILM objects
 Same SAP ILM objects used for "blocking & deletion", representing business objects



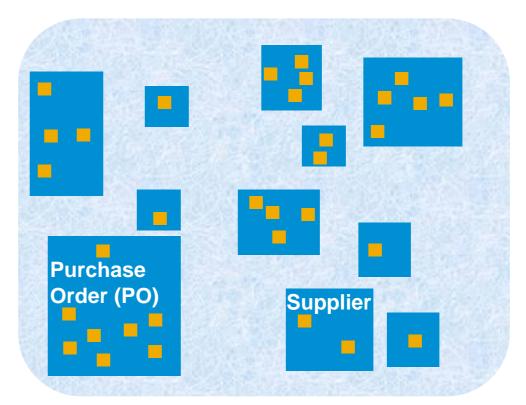


Overview

Based on SAP ILM objects
 Same SAP ILM objects used for "blocking & deletion", representing business objects



 Automated detection of links between tables in SAP ILM objects



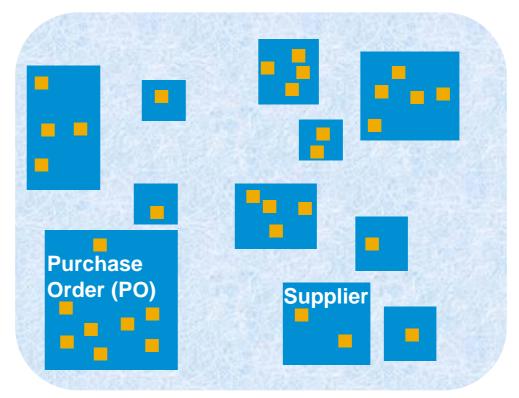
Overview

Based on SAP ILM objects
 Same SAP ILM objects used for "blocking & deletion", representing business objects



- Automated detection of links between tables in SAP ILM objects
- 3. Logical grouping via

 Table Clusters (tables that belong together logically, such as address, purchaser order, or supplier data)



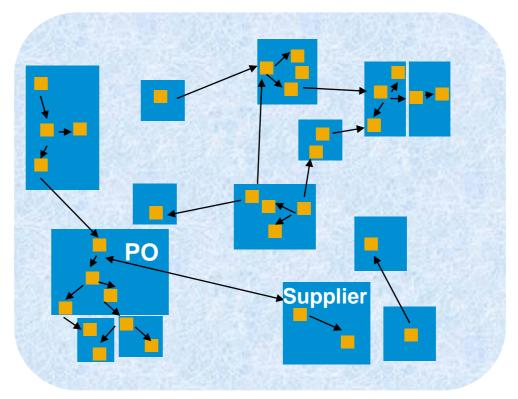
Overview

Based on SAP ILM objects
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- Automated detection of links between tables in SAP ILM objects
- 3. Logical grouping via

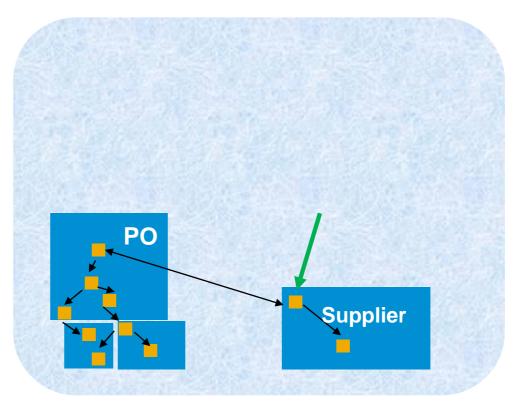
 Table Clusters (tables that belong together logically, such as address, purchaser order, or supplier data)
- 4. Data retrieval using links between the clusters



Overview

- Start in cluster "Supplier" for a supplier/business partner
- Read all data from tables in "Supplier" cluster
- 3. Read all data from linked "Purchase Order" cluster(s) based on link between them ("Supplier" → Table with supplier field in "PO" cluster)





Overview

 If the data subject requests information about their personal data, enter the business partner number and language of the data subject using the Start Data Collection application



- All personal data for the business partner is collected for every configured purpose
- Data collection results:
 - Are converted into an understandable output
 - Are displayed in a hierarchical order
 - Can be viewed and downloaded

SAP Business Suite and SAP S/4HANA

Some technical features – Read Access Logging



Read Access Logging (RAL) allows:

- Compliance with data privacy regulations
- Compliance with industry standards (such as Basel suite for banking industry)
- Monitoring of access to classified data or other sensitive data
- Monitoring of user actions on a need-to-know basis only



Scope of RAL focuses on:

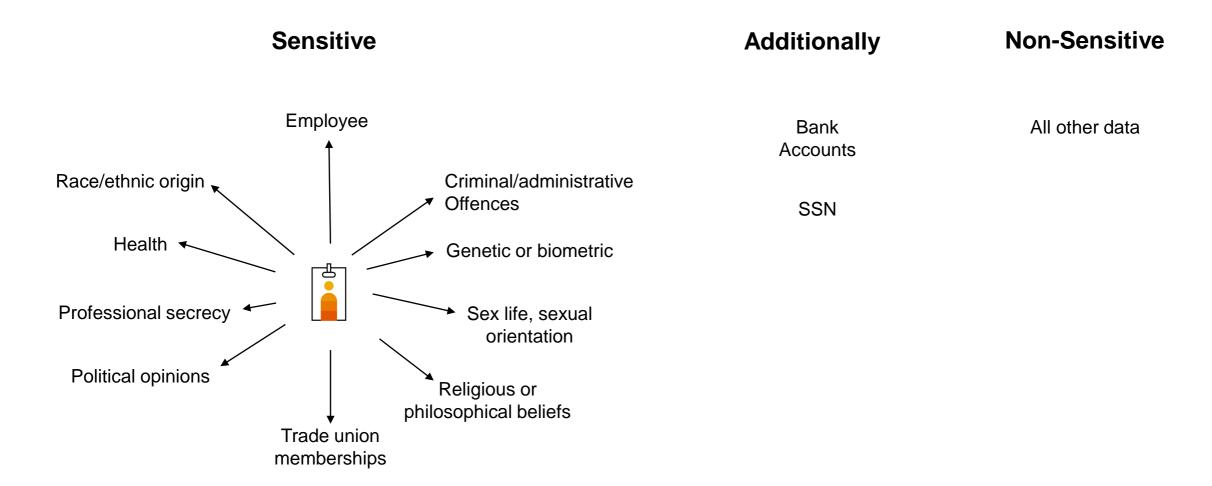
- Valid (authenticated) users
- Running authorized applications

If these users misuse applications to gain information ("insider knowledge"), this can be checked using the read access logs:

- Logging only the data that the user saw
- Identifying users who committed a violation after it occurred ("you will be caught")

RAL is not intended for:

- Preventing hacking
- Preventing illegal access



The SAP sample configuration is delivered taking into consideration sensitive personal data (Article 9(1) EU GDPR).

The following features are available:

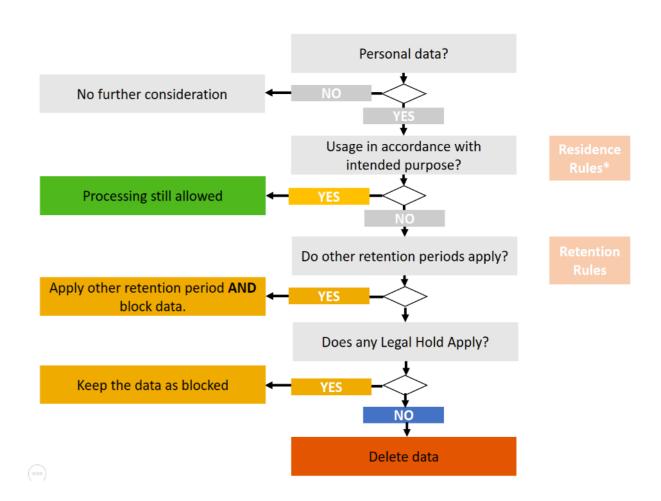
- Ability to enable and configure read access logging
- Ability to view logs
- Pre-delivered RAL configuration
- Ability to archive and delete generated logs using SAP Information Lifecycle Management (SAP ILM)

SAP Cloud Platform Data Retention Manager



SAP Cloud Platform Data Retention Manager

- Enables applications in SAP Cloud Platform to fulfil the data subject's rights in accordance with the EU GDPR guidelines:
 - Right to be forgotten
 - Maintain purposes/legal ground with personal data usage
- Maintains residence and retention rules
- Deletes data subjects



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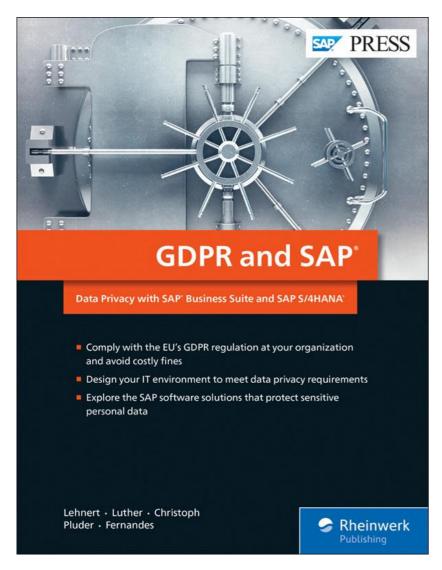
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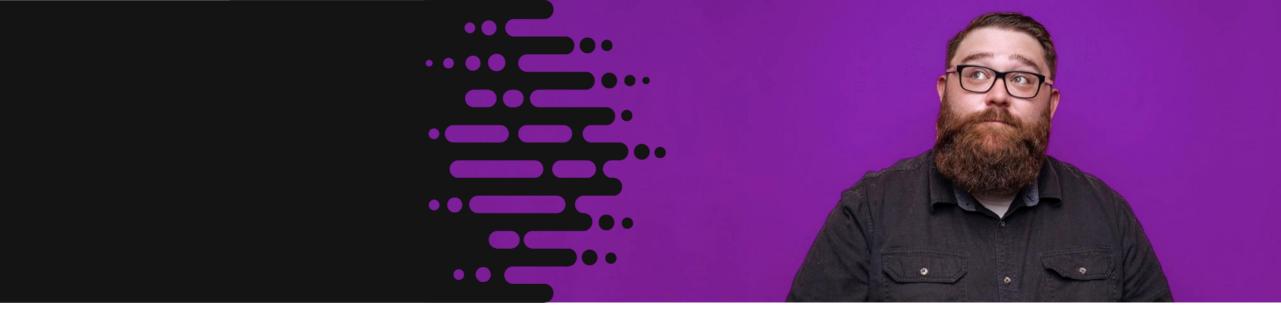
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Contact for further topic inquiries

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