**1. @AbapCatalog Annotations *(Technical Settings)***

These control **technical properties** of the CDS view in the ABAP Dictionary.

| **Annotation** | **Purpose** | **Where to Use in CDS** | **Example** |
| --- | --- | --- | --- |
| @AbapCatalog.sqlViewName | Defines the underlying SQL view name in the database. | At the **top of CDS view** (mandatory). | @AbapCatalog.sqlViewName: 'ZCUST\_VW' |
| @AbapCatalog.compiler.compareFilter | Optimizes filters during query execution. | At the **top of CDS view**. | @AbapCatalog.compiler.compareFilter: true |
| @AbapCatalog.preserveKey | Ensures key fields are retained when using joins. | At the **top of CDS view**. | @AbapCatalog.preserveKey: true |
| @AbapCatalog.buffering.type | Enables buffering for the view. | At the **top of CDS view**. | @AbapCatalog.buffering.type: #FULL |
| @AbapCatalog.buffering.numberOfKeyFields | Specifies the number of key fields for buffering. | At the **top of CDS view**. | @AbapCatalog.buffering.numberOfKeyFields: 2 |

**2. @EndUserText Annotations *(Descriptions & Labels)***

These are used to provide **meaningful names** for CDS views, fields, and reports.

| **Annotation** | **Purpose** | **Where to Use** | **Example** |
| --- | --- | --- | --- |
| @EndUserText.label | Provides a **short description** for the CDS view or field. | At the **top of CDS view** or above fields. | @EndUserText.label: 'Customer Sales Report' |
| @EndUserText.quickInfo | Adds tooltip-like help text. | Above the **field**. | @EndUserText.quickInfo: 'Displays sales order net value' |

**3. @AccessControl Annotations *(Authorization & Security)***

Used to **restrict data** based on user authorization.

| **Annotation** | **Purpose** | **Where to Use** | **Example** |
| --- | --- | --- | --- |
| @AccessControl.authorizationCheck | Defines whether authorization checks are needed. | At the **top of CDS view**. | @AccessControl.authorizationCheck: #CHECK |
| @AccessControl.personalData | Marks a CDS view as containing personal data. | At the **top of CDS view**. | @AccessControl.personalData: #CUSTOMER\_DATA |

**4. @OData.publish Annotation *(Expose to OData/Fiori)***

| **Annotation** | **Purpose** | **Where to Use** | **Example** |
| --- | --- | --- | --- |
| @OData.publish | Publishes CDS view automatically as an OData service. | At the **top of CDS view**. | @OData.publish: true |

**Usage:** When CDS needs to be consumed in **SAP Fiori**, **UI5 apps**, or **external systems**.

**5. @Analytics Annotations *(For Analytical Reporting)***

| **Annotation** | **Purpose** | **Where to Use** | **Example** |
| --- | --- | --- | --- |
| @Analytics.dataCategory | Defines view type: #CUBE or #DIMENSION. | At the **top of CDS view**. | @Analytics.dataCategory: #CUBE |
| @Analytics.query | Marks the view as a query view. | At the **top of CDS view**. | @Analytics.query: true |
| @AnalyticsDetails.query.axis | Defines axis (rows/columns). | Above the **field**. | @AnalyticsDetails.query.axis: #COLUMNS |

**Usage:** When CDS views are used for **Fiori Analytical Apps** or **SAC reports**.

**6. @UI Annotations *(Fiori User Interface Controls)***

These control how fields are displayed in **SAP Fiori**.

| **Annotation** | **Purpose** | **Where to Use** | **Example** |
| --- | --- | --- | --- |
| @UI.lineItem | Displays field as a column in the list report. | Above the **field**. | @UI.lineItem: [{position: 10}] |
| @UI.selectionField | Marks a field for search filters. | Above the **field**. | @UI.selectionField: [{position: 20}] |
| @UI.identification | Marks fields shown on the object page. | Above the **field**. | @UI.identification: [{position: 30}] |
| @UI.dataPoint | Highlights KPIs and measures. | Above the **field**. | @UI.dataPoint: {title: 'Net Value'} |

**Usage:** Used when creating **Fiori List Reports** and **Object Pages**.

**7. @Semantics Annotations *(Field Meaning & Formatting)***

These define **semantic meaning** of fields like currency, quantity, etc.

| **Annotation** | **Purpose** | **Where to Use** | **Example** |
| --- | --- | --- | --- |
| @Semantics.amount.currencyCode | Connects amount fields with currency code. | Above the **field**. | @Semantics.amount.currencyCode: 'WAERS' |
| @Semantics.quantity.unitOfMeasure | Links quantity fields with UOM. | Above the **field**. | @Semantics.quantity.unitOfMeasure: 'MEINS' |
| @Semantics.currencyCode | Marks the field as currency code. | Above the **field**. | @Semantics.currencyCode: true |

**Usage:** Essential when working with **monetary values** and **units** in CDS reports.

**8. @ObjectModel Annotations *(OData Behavior Control)***

| **Annotation** | **Purpose** | **Where to Use** | **Example** |
| --- | --- | --- | --- |
| @ObjectModel.createEnabled | Enables **create operation** on CDS view. | At the **top of CDS view**. | @ObjectModel.createEnabled: true |
| @ObjectModel.updateEnabled | Enables **update operation**. | At the **top of CDS view**. | @ObjectModel.updateEnabled: true |
| @ObjectModel.deleteEnabled | Enables **delete operation**. | At the **top of CDS view**. | @ObjectModel.deleteEnabled: true |
| @ObjectModel.readOnly | Makes CDS view **read-only**. | At the **top of CDS view**. | @ObjectModel.readOnly: true |

**Usage:** Used for **CRUD operations** in OData services.

**9. @Consumption Annotations *(Filters, Parameters, Value Helps)***

| **Annotation** | **Purpose** | **Where to Use** | **Example** |
| --- | --- | --- | --- |
| @Consumption.filter | Enables filter selection. | Above the **field**. | @Consumption.filter: true |
| @Consumption.valueHelpDefinition | Provides F4 help from another CDS. | Above the **field**. | @Consumption.valueHelpDefinition: [{entity: 'ZVH\_CDS'}] |
| @Consumption.derivation | Derives values based on logic. | Above the **field**. | @Consumption.derivation: true |

**10. @VDM Annotations *(S/4HANA Virtual Data Model)***

| **Annotation** | **Purpose** | **Where to Use** | **Example** |
| --- | --- | --- | --- |
| @VDM.viewType | Defines CDS view type for VDM. | At the **top of CDS view**. | @VDM.viewType: #CONSUMPTION |

**11. @Search Annotations *(For Fiori Enterprise Search)***

| **Annotation** | **Purpose** | **Where to Use** | **Example** |
| --- | --- | --- | --- |
| @Search.defaultSearchElement | Marks a field as searchable. | Above the **field**. | @Search.defaultSearchElement: true |
| @Search.fuzzinessThreshold | Enables fuzzy search matching. | Above the **field**. | @Search.fuzzinessThreshold: 0.7 |

**📌 Example CDS View Using Multiple Annotations**

@AbapCatalog.sqlViewName: 'ZCUST\_SALES'

@EndUserText.label: 'Customer Sales Report'

@AccessControl.authorizationCheck: #CHECK

@OData.publish: true

define view ZCUST\_SALES\_CDS

as select from vbak as a

inner join vbap as b on a.vbeln = b.vbeln

{

key a.vbeln as SalesOrder,

@UI.lineItem: [{position: 10}]

@EndUserText.label: 'Customer Number'

a.kunnr as Customer,

@UI.lineItem: [{position: 20}]

@Semantics.amount.currencyCode: 'WAERS'

b.netwr as NetValue,

@Semantics.currencyCode: true

a.waers as Currency

}