

# Capability Gaps in the S-100 Portrayal Model

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for

TSM7

# Capability Gaps Analysis

Identify the capability gaps which preclude full implementation of product portrayal

# S-100 Portrayal Gaps

ECDIS

Dynamic  
Portrayal

Alerts and  
Indications

Temporary  
Overlays  
(Hover)

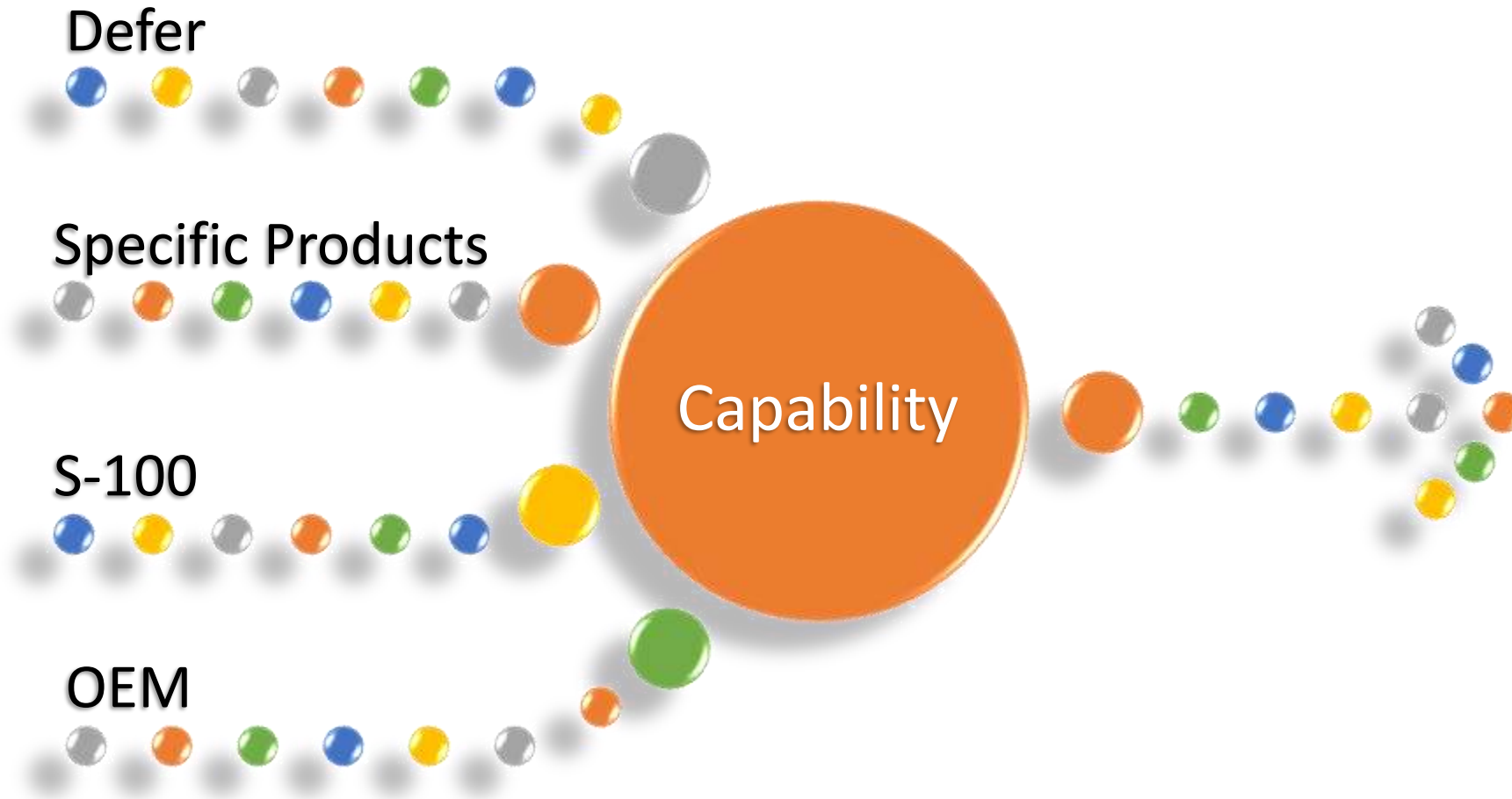
Dependent  
Symbol  
Visibility

Date  
Dependent

Animation

Time  
Series

# How To Address?



# Time to Implementation



# Alerts and Indications

Gaps

Recommended Approach:  
S-100

No capability

Refinement of TSM6 portrayal  
modifications

Details  
Presented  
Separately

Add  
AlertReference

Modify  
Portrayal  
Catalogue

Add Alerts  
Catalogue

Paper TSM7-5.2

# S-52 Temporary Overlays / Hover

S-52 PresLib 10.8.5

Optional

S-101 Applicability

SY(INFORM01)

SY(CHDATD01)

LIGHTS

LNDMRK

Buoys

Beacons

# S-52 Temporary Overlays / Hover

## Gaps

## Recommended Approach: S-100

Requires  
product  
specific  
knowledge

Catalogue change may require  
software changes

Modify

OEM  
implementation  
optional

New  
Features

Change  
existing  
feature

Portrayal  
modifications

Drawing  
Instruction(s)

S-101 Portrayal  
Catalogue



# Dependent Symbol Visibility

Visibility dependent on visibility of “base” symbol(s)

Examples

Base Symbol(s) Visibility Affected By

Labels

Highlights

Viewing  
Group

Scale

Date  
Dependent

Line  
Suppression

Text

Contours

SY(INFORM01)

SY(CHDATD01)

Minimum

Maximum

# Dependent Symbol Visibility

Gaps

Recommended Approach:  
S-100

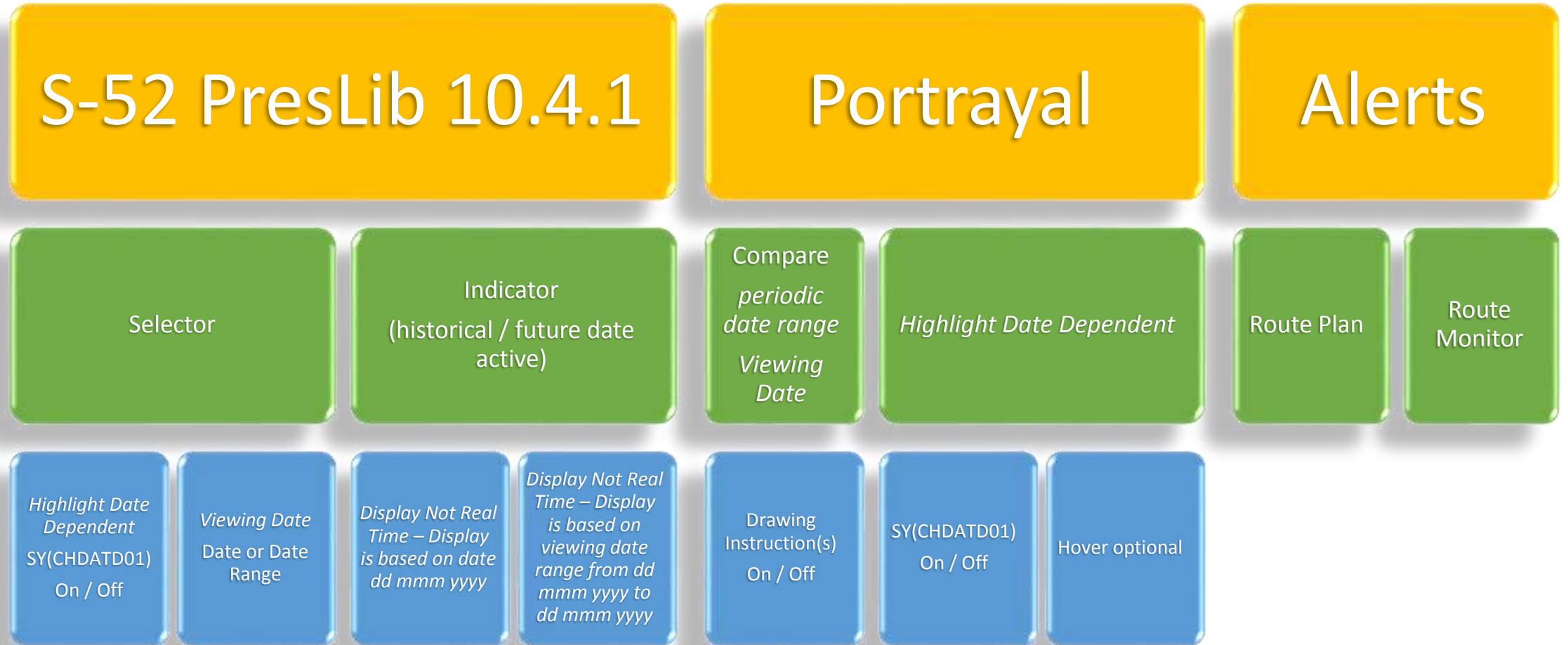
No capability

Modify drawing instruction(s)

No mechanism to express  
dependency

Evaluate dependencies during  
rendering

# S-52 Date Dependent



# S-52 Date Dependent

## Gaps

Filter requires comparison of dates

SY(CHDATD01)  
dependent on  
feature  
visibility

S-52  
Implementation Inconsistency

Context parameter type  
*Date*  
is unclear

XSLT  
No date  
comparison  
operators

Lua  
Embed a date  
library into  
Portrayal  
Catalogue

Can't be  
expressed via  
Portrayal  
Catalogue

SY(CHDATD01)  
selector  
*Highlight Date  
Dependent*

SY(INFORM01)  
viewing group  
*31030*

Type of  
*Viewing Date*

Needs to encode  
Single Date  
or  
Date Range

# S-52 Date Dependent

## Recommended Approach: S-100 / OEM

Portrayal

Rendering

SY(CHDATD01)  
dependent on  
feature visibility

S-52  
Implementation  
Inconsistency

Context parameter type  
*Date*  
is unclear

Add date attributes  
to  
DrawingInstruction

Add rule(s) for  
SY(CHDATD01)

OEM  
compare  
DrawingInstruction  
to  
*Viewing Date*

Leverage  
Dependent Symbol  
Visibility Solution

Assign  
SY(CHDATD01) to a  
ViewingGroup

Approach doesn't  
use context  
parameter

OEM  
provide  
*Viewing Date*  
selector

# Dynamic Portrayal

## S-100 10c-6 HDF5 Profile

Time Series Data

Use Cases

Intervals

Historical  
Imagery

Weather

Tides

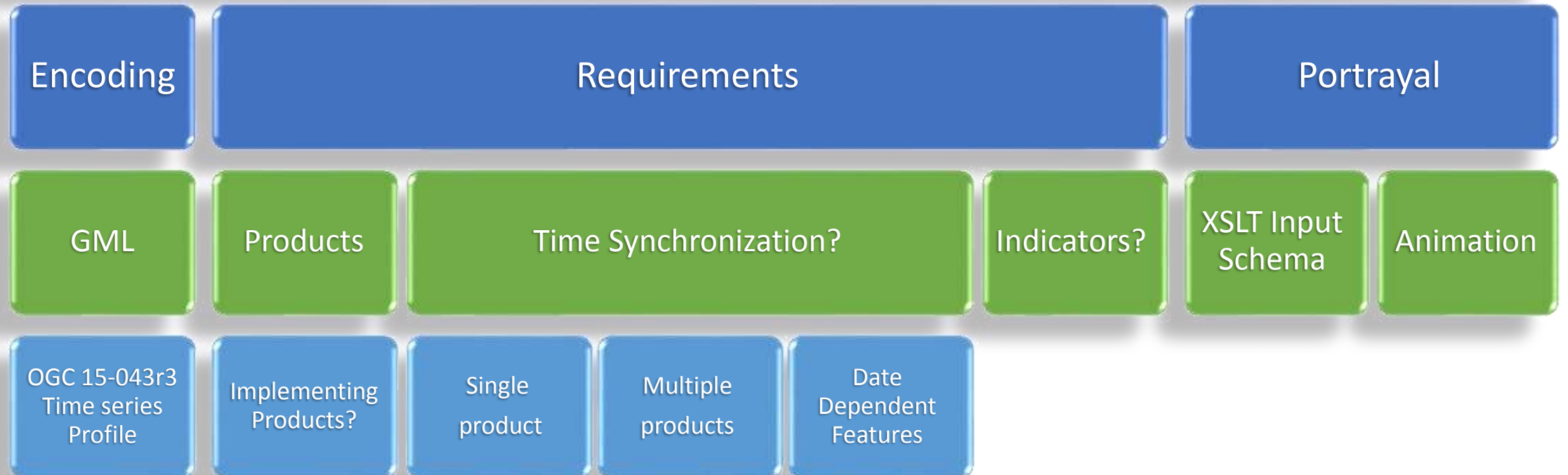
...

Fixed

Variable

# Dynamic Portrayal

## Gaps



# Dynamic Portrayal

Recommended Approach:  
Defer

Collect  
Requirements

Prototype Portrayal Solutions

Manual Time  
Selection

Manual Sequence  
Selection

Animation

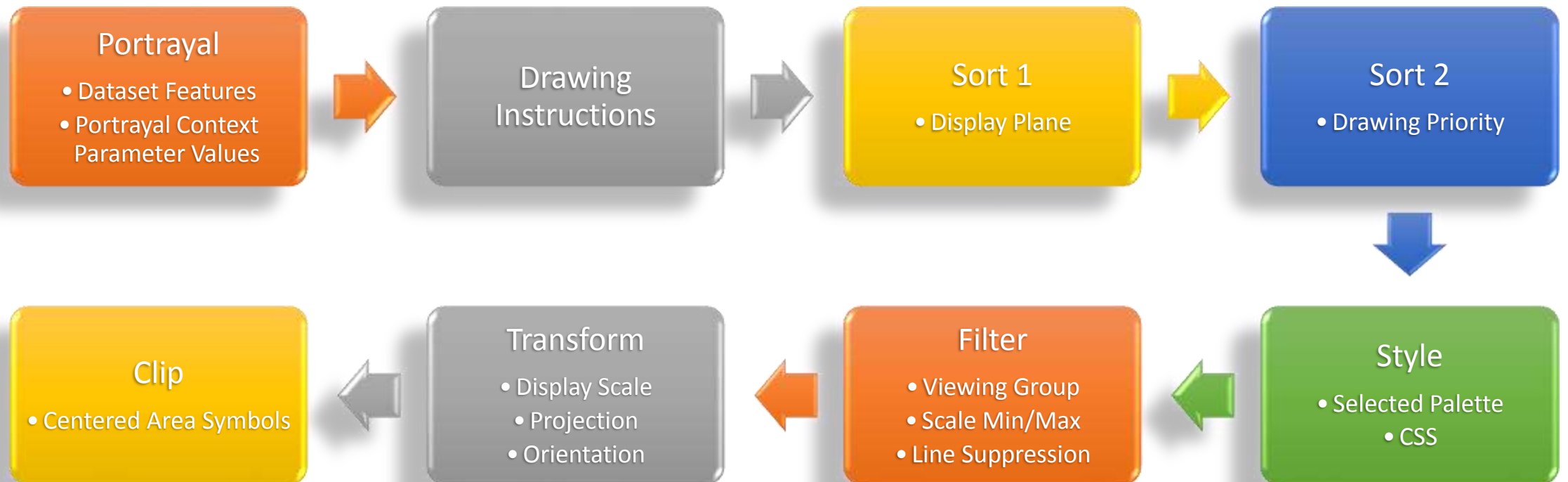
Leverage Date  
Dependent  
Implementation?



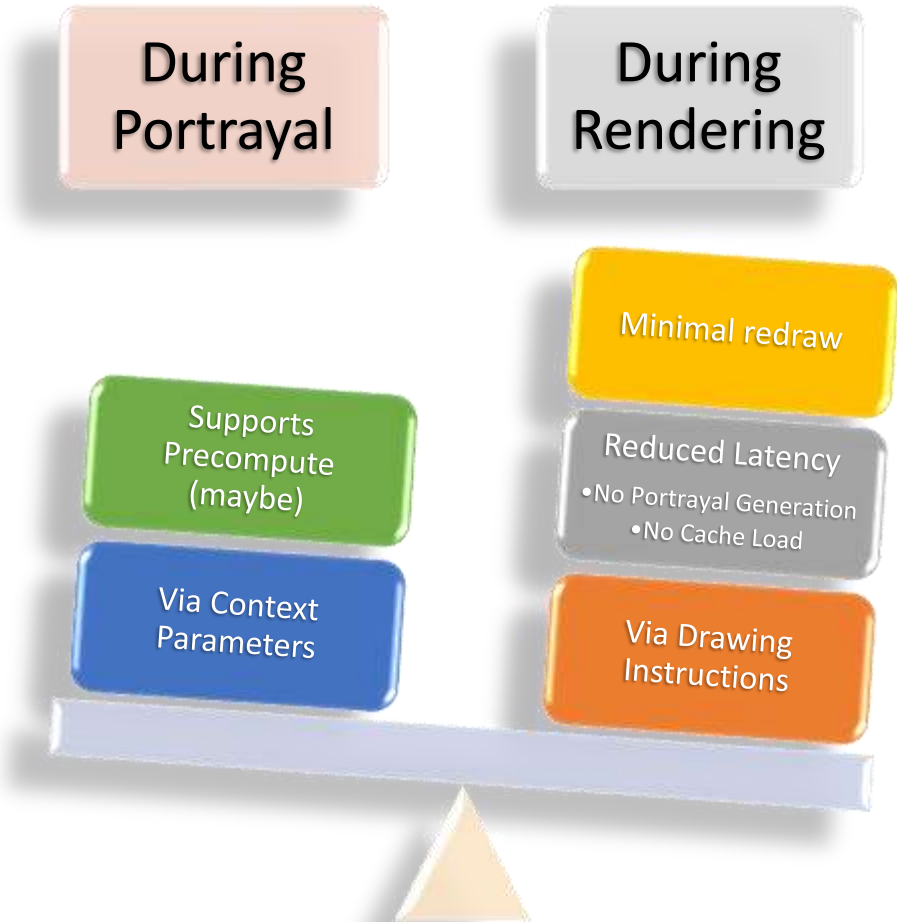
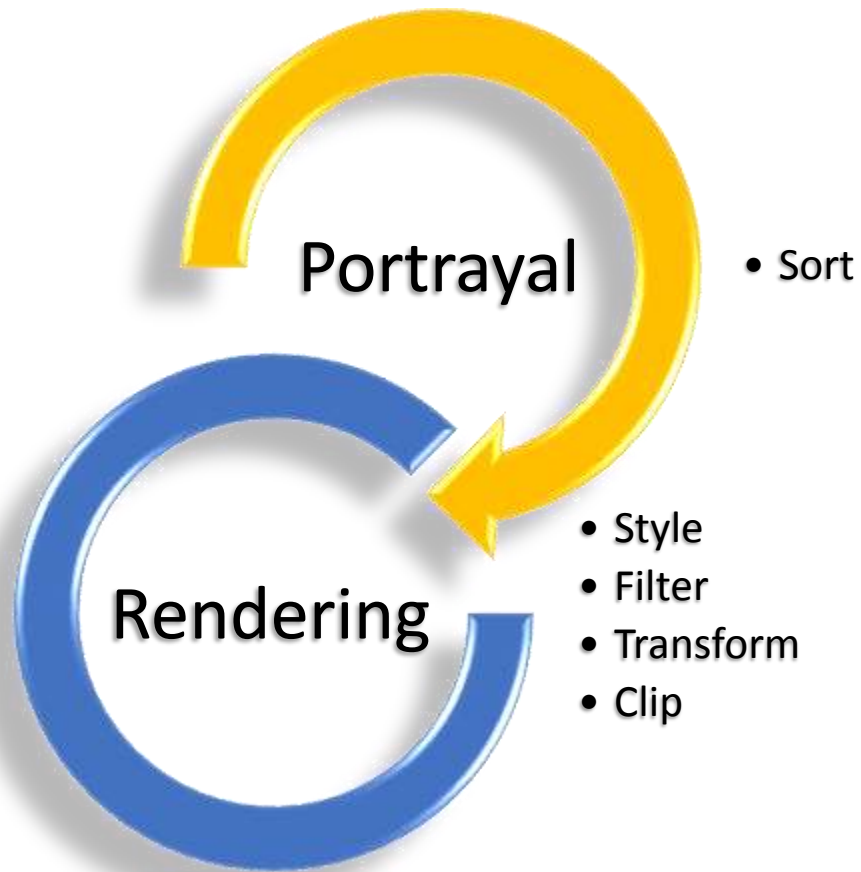
# Visualization Process

Analyze the current visualization process and how it could be extended to address capability gaps

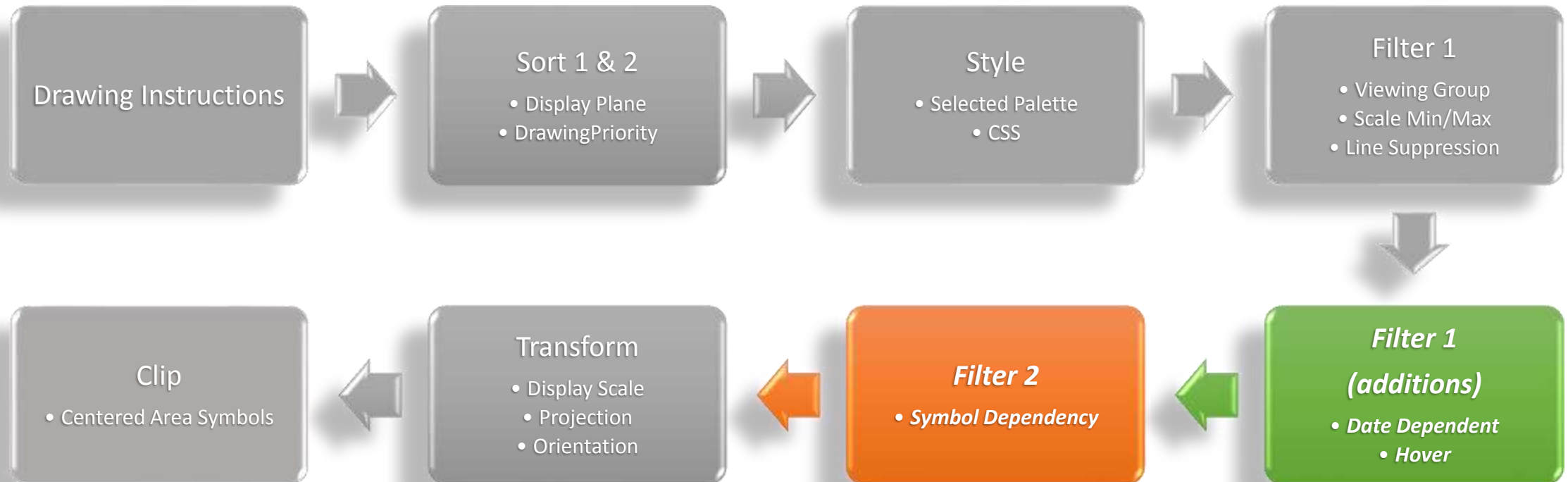
# Current S-100 Visualization Process



# How to Address Capability Gaps?



# Proposed Changes to S-100 Visualization Process



# Addressing the Gaps: Part 9

Alerts, Temporary Overlays, Dependent Symbols, Date Dependent

# Proposed DrawingInstruction Changes

Attribute	<b>id</b>	An identifier for the drawing instruction	string 0..1
Attribute	<b>parentId</b>	Instruction is dependent on a parent instruction	string 0..1
Attribute	<b>hover</b>	Instruction is shown only on hover-over (OEM support optional)	boolean 0..1

# Proposed DrawingInstruction Changes

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Association	timeValid	Instruction valid during the specified time interval(s)	TimeInterval  0..*
Association	alertReference	A reference to an alert catalog entry	AlertReference  0..1

---

# New Class: TimeInterval

Association	<b>lower</b>	Start of the interval	Instant 0..1
Association	<b>upper</b>	End of the interval	Instant 0..1
Attribute	<b>closure</b>	An S100_IntervalType Default is <i>closedInterval</i>	string 0..1



# New Class: Instant

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Attribute	date	An S100_TruncatedDate	string 0..1
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Attribute	time	An S-100 Time	string 0..1
-----------	------	---------------	----------------

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Attribute	dateTime	An S-100 DateTime	string 0..1
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# Addressing the Gaps: Part 9a

Alerts, Temporary Overlays, Dependent Symbols, Date Dependent

# New Visibility Commands

## Id

- Assigns an identifier to drawing commands

## Parent

- Visibility dependent on parent instruction(s) visibility

## Hover

- Visibility dependent on hover-over

# Visibility Commands

*Id[:id]*

- Sets an identifier for drawing commands which follow
- Resets to no ID if no parameters are supplied

*Parent[:parentId]*

- Visibility of subsequent commands depends on visibility of referenced command(s)
- Resets to no dependency if no parameters are supplied

*Hover: hover*

- Indicates if visibility of subsequent commands depends on hover-over
- OEM implementation of support for this feature is optional

# New State Command Type: Time

## Table 9a-6: Add Time Command Type

- Date
- Time
- DateTime
- TimeValid
- ClearTime

## Add 9a-11.2.2.8 Time Commands

- Applies time intervals to drawing commands
- Described by a lower and upper date and time
- Commands can be intermixed

## Example

- Date:20190101
- Time:183059Z
- DateTime:20190101T200000Z
- TimeValid:closedInterval

# Time Commands

Date:[*lower*][,*upper*]

- Specifies a lower and/or upper date
- *lower* and *upper* are S100\_TruncatedDate(s) (see S-100 Table 1-2)

Time:[*lower*][,*upper*]

- Specifies a lower and/or upper time
- *lower* and *upper* are Time(s) (see S-100 Table 1-2)

DateTime:[*lower*][,*upper*]

- Specifies a lower and/or upper date and time
- *lower* and *upper* are DateTime(s) (see S-100 Table 1-2)

# Time Commands

## TimeValid[:closure]

- Creates a time interval which applies to subsequent drawing commands
- Interval described by preceding *Date / Time / DateTime* commands
- Intervals accumulate until cleared with a *ClearTime* command
- Closure specifies a *S100\_IntervalType*, default is *closedInterval*
- Subsequent drawing commands and their associated information (e.g. alerts) are valid if any time interval coincides with the viewing date of the portrayal (or other appropriate selector)

## ClearTime

- Clears all accumulated time intervals
- Subsequent drawing commands are not time dependent

# Sample Drawing Instruction

## Part 9

```
<textInstruction
  parentId="Foo" hover="true">
  <timeValid closure="leSemiInterval">
    <upper date="20190101"/>
  </timeValid>
  ...
  <text>bar</text>
  ...
</textInstruction>
```

## Part 9a

```
Parent:Foo
Hover:true
Date:,20190101
TimeValid:leSemiInterval
...
TextInstruction:bar
```



# Action Required

Next steps for dynamic portrayal

Feedback on recommended changes

Prepare change forms and present to WG