The global list of Scale bands

Index	MinScale	MaxScale
1	NULL	1:10,000,000
2	1:10,000,000	1: 3,500,000
3	1:3,500,000	1:1,500,000
4	1:1,500,000	1:700,000
5	1:700,000	1:350,000
6	1:350,000	1:180,000
7	1:180,000	1:90,000
8	1:90,000	1:45,000
9	1:45,000	1:22,000
10	1:22,000	1:12,000
11	1:12,000	1:8,000
12	1:8,000	1:4,000
13	1:4,000	1:3,000
14	1:3,000	1:2,000
15	1:2,000	1:1,000

Situation in the System Data Base :
Four DataSets and Five DataCoverages

DataSet-4 **DataCoverage-E** **1/180000-1/350000**	**DataSet-1** **DataCoverage-B** **1/ 45000- 1/180000** DataSet-1 DataCoverage-A 1/12000-1/45000	**DataSet-2** **DataCoverage-C** **1/45000-1/180000**	**DataSet-3** **DataCoverage-D** **1/180000-1/350000**
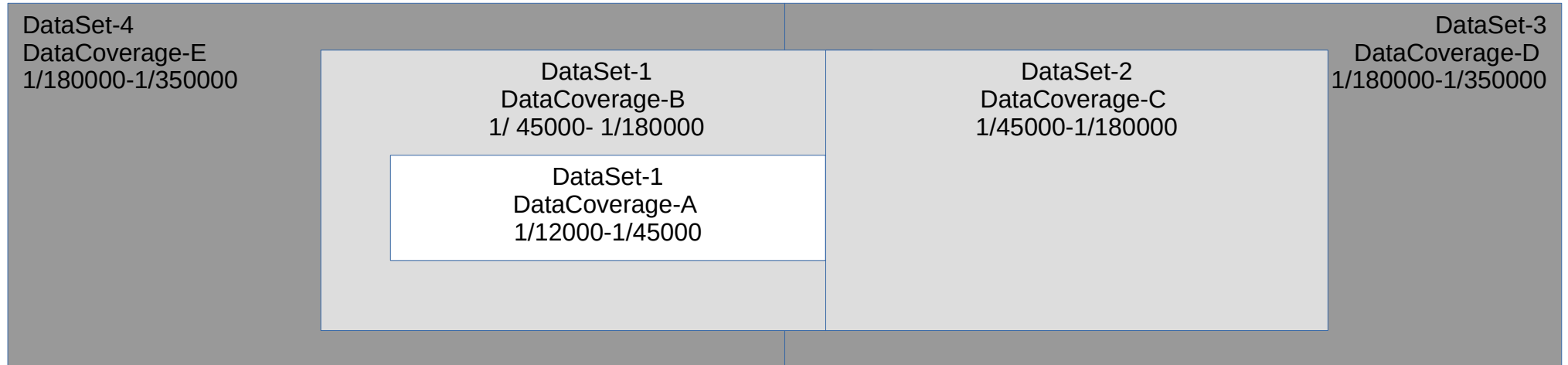
1) INV is the inventory of all data coverages declared in the system database. Each Data Coverage has a maximum-minimum display scales and is linked to the global scale band list by indexes (eg 8-10)
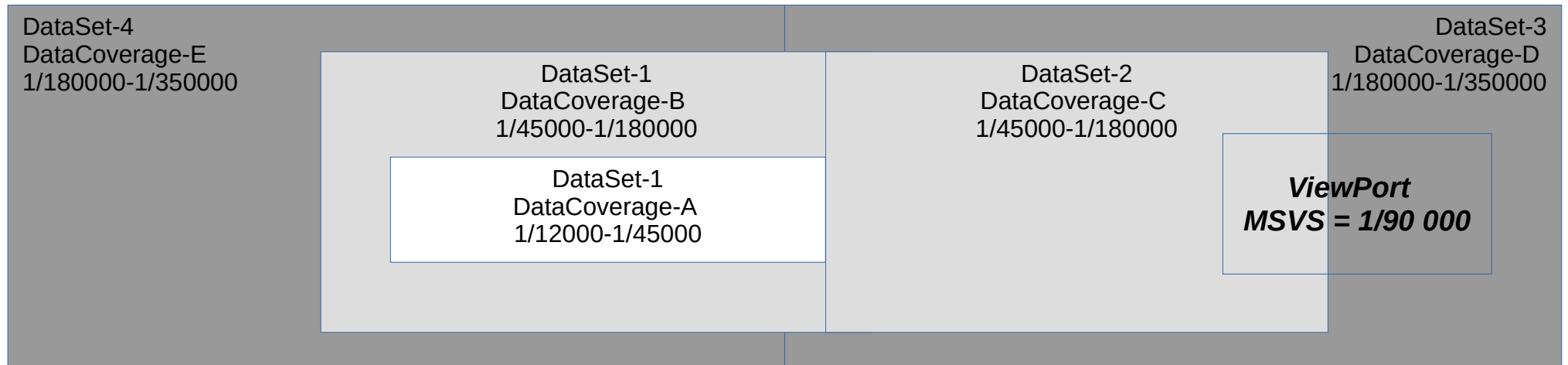
DS-1-DC-B 1/45000-1/180000 **(6)**
DS-1-DC-A 1/12000-1/45000 **(9-10)**
DS-3-DC-D 1/180000-1/350000 **(6)**
DS-2-DC-C 1/45000-1/180000 **(7-8)**
DS-4-DC-D 1/180000-1/350000 **(6)**

2

1) First Sample : a viewport which a MSVS 1/90 000

DataSet-4
DataCoverage-E
1/180000-1/350000

DataSet-3
DataCoverage-D
1/180000-1/350000

DataSet-1
DataCoverage-B
1/ 45000- 1/180000

DataSet-2
DataCoverage-C
1/45000-1/180000

DataSet-1
DataCoverage-A
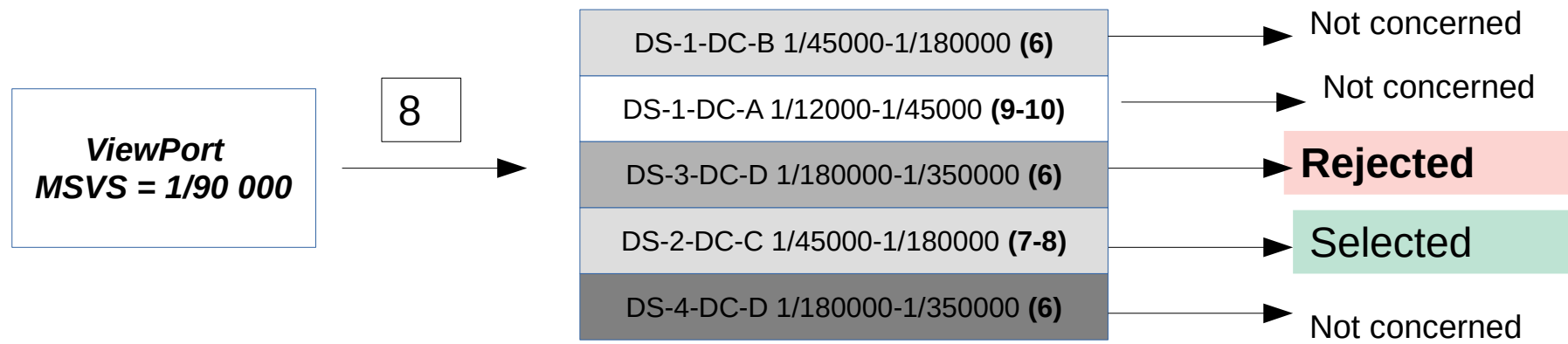1/12000-1/45000

ViewPort
MSVS = 1/90 000
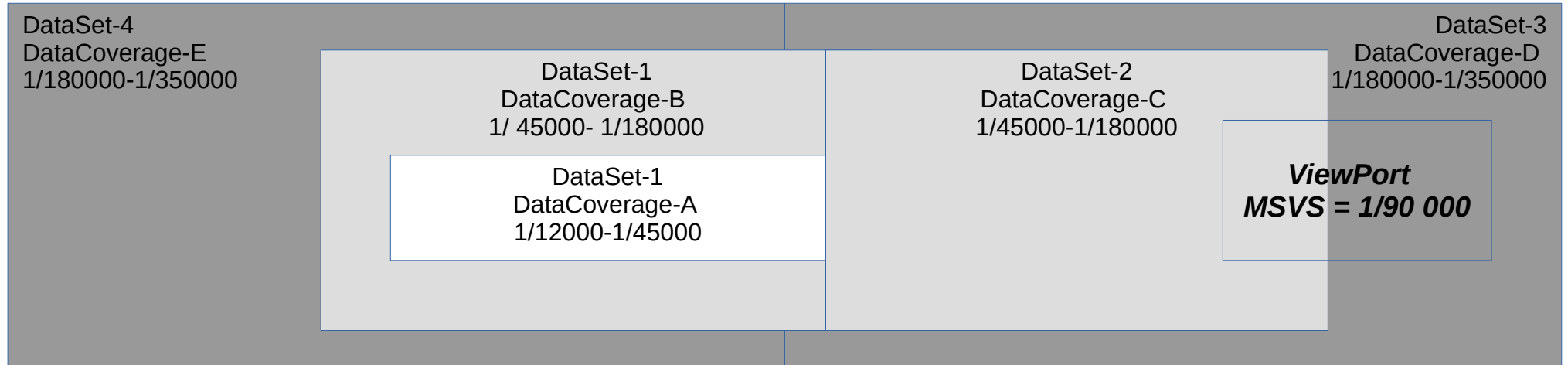
The start scale band's index of viewport for MSVS (90 000) is **8** => resulting from GetScaleBand(scale)
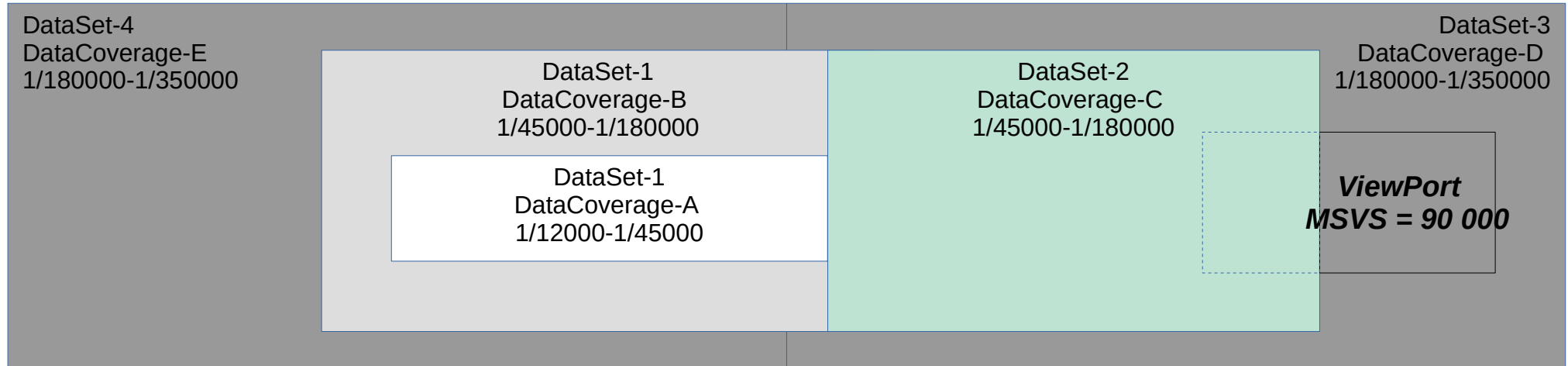
First Sample : a viewport which a MSVS 1/90 000

DataSet-4
DataCoverage-E
1/180000-1/350000

DataSet-3
DataCoverage-D
1/180000-1/350000

DataSet-1
DataCoverage-B
1/45000-1/180000

DataSet-2
DataCoverage-C
1/45000-1/180000

DataSet-1
DataCoverage-A
1/12000-1/45000

ViewPort
MSVS = 1/90 000

1) Start SB = 8 : First Loop through the INV to test each data coverage with the restricted filter :
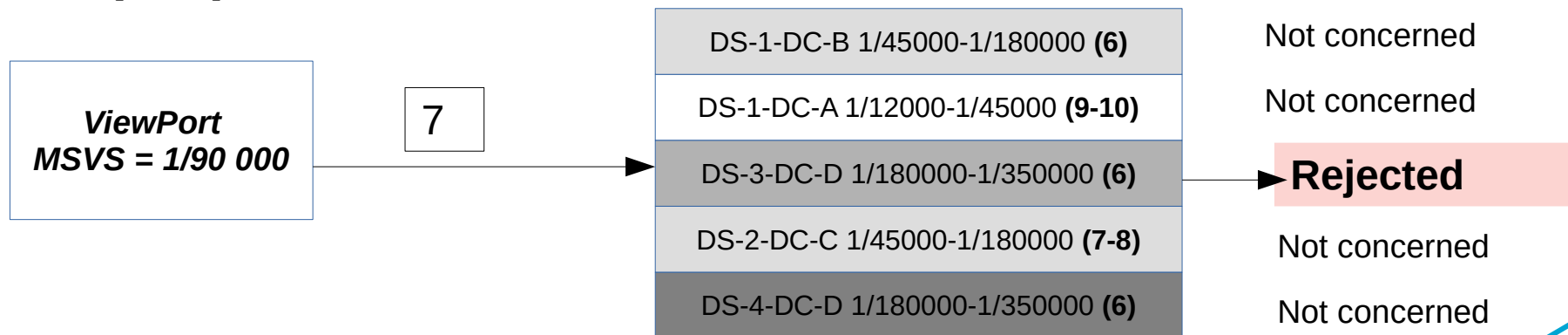max(minDS, minScale[index]) < min(maxDS, maxScale[index]) : only DC-C is selected

ViewPort
MSVS = 1/90 000

8

DS-1-DC-B 1/45000-1/180000 **(6)**	→	Not concerned
DS-1-DC-A 1/12000-1/45000 **(9-10)**	→	Not concerned
DS-3-DC-D 1/180000-1/350000 **(6)**	→	**Rejected**
DS-2-DC-C 1/45000-1/180000 **(7-8)**	→	Selected
DS-4-DC-D 1/180000-1/350000 **(6)**	→	Not concerned

Not concerned == geometry exclusion

4

First Sample with implementation based a series of loops

DataSet-4
DataCoverage-E
1/180000-1/350000

DataSet-1
DataCoverage-B
1/45000-1/180000

DataSet-1
DataCoverage-A
1/12000-1/45000

DataSet-2
DataCoverage-C
1/45000-1/180000

DataSet-3
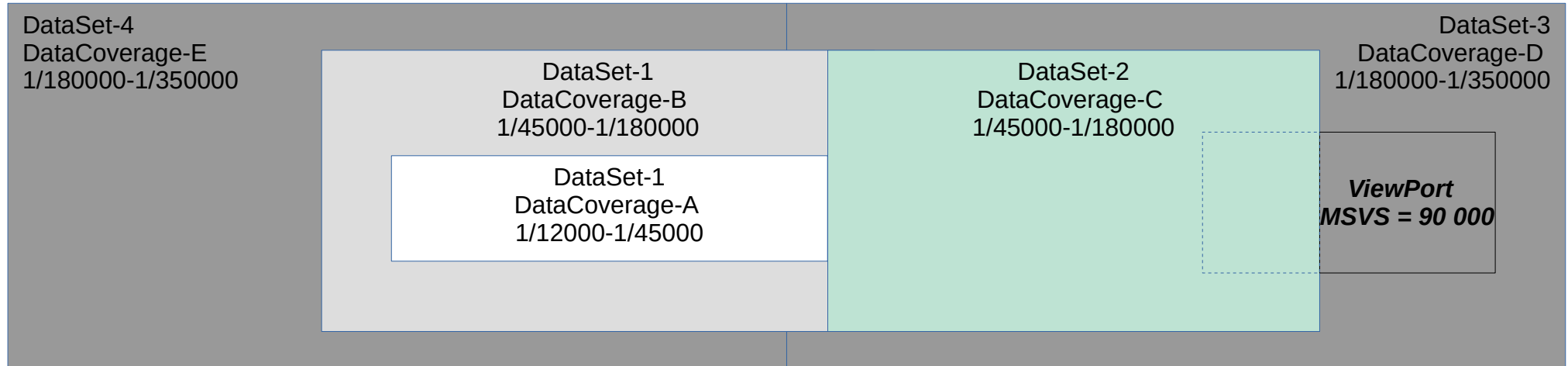DataCoverage-D
1/180000-1/350000

ViewPort
MSVS = 90 000

2) As the viewport is not filled, we go on with **SB = SB -1 (7) a second Loop** for testing data coverage in overscale situation but with a minimum display scale superior to maxDS < maxScale[index] and minDS > minScale[index]

ViewPort
MSVS = 1/90 000

7

|	
DS-1-DC-B 1/45000-1/180000 **(6)**	Not concerned
DS-1-DC-A 1/12000-1/45000 **(9-10)**	Not concerned
DS-3-DC-D 1/180000-1/350000 **(6)**	**Rejected**
DS-2-DC-C 1/45000-1/180000 **(7-8)**	Not concerned
DS-4-DC-D 1/180000-1/350000 **(6)**	Not concerned

Not concerned == geometry exclusion

5

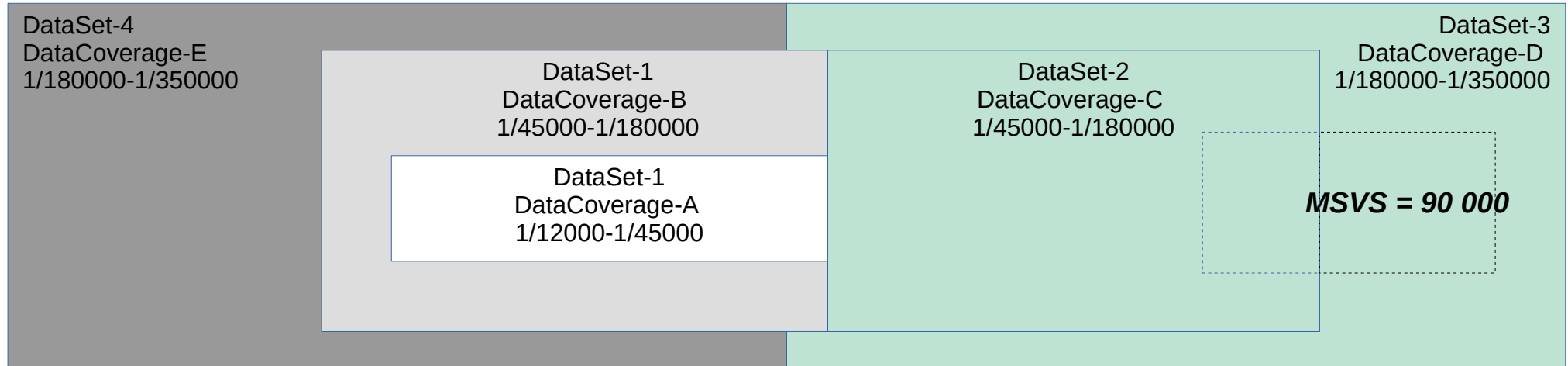# First Sample with implementation based a series of loops

2) As the viewport is not filled, we go on with **SB = SB -1 (6) a thrird Loop** for testing data coverage in overscale situation but with a minimum display scale superior to maxDS < maxScale[index] and minDS > minScale[index]
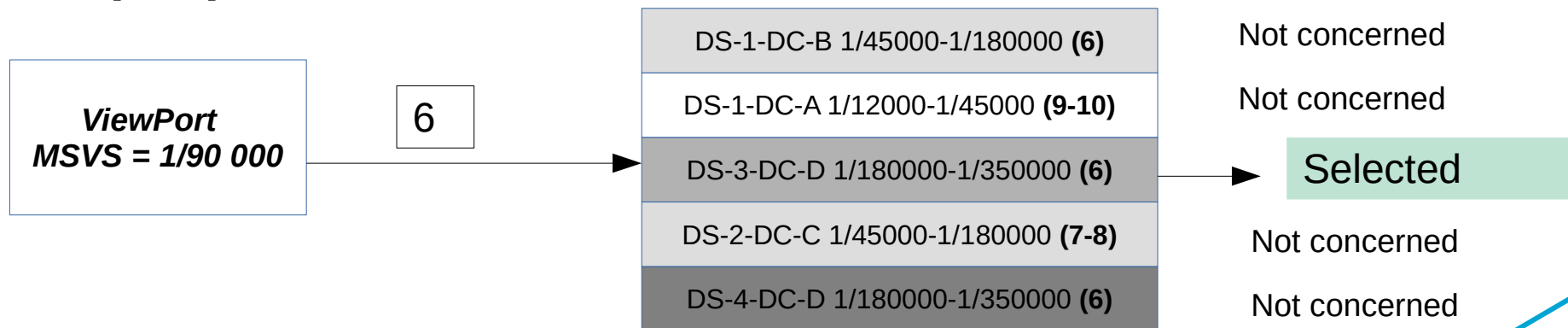
Not concerned == geometry exclusion

Result : First Sample is **OK** with two data coverages selected

DataSet-4
DataCoverage-E
1/180000-1/350000

DataSet-1
DataCoverage-B
1/45000-1/180000

DataSet-1
DataCoverage-A
1/12000-1/45000

DataSet-2
DataCoverage-C
1/45000-1/180000

DataSet-3
DataCoverage-D
1/180000-1/350000

MSVS = 90 000

2) As the viewport is filled, we stop and the result is

MSVS = 1/90 000

DS-1-DC-B 1/45000-1/180000 **(6)**

DS-1-DC-A 1/12000-1/45000 **(9-10)**

DS-3-DC-D 1/180000-1/350000 **(6)** → Selected

DS-2-DC-C 1/45000-1/180000 **(7-8)** → Selected

DS-4-DC-D 1/180000-1/350000 **(6)**