

# **CE1.h Related : BVSP Mode Inheritance (JCT3V-D0092)**

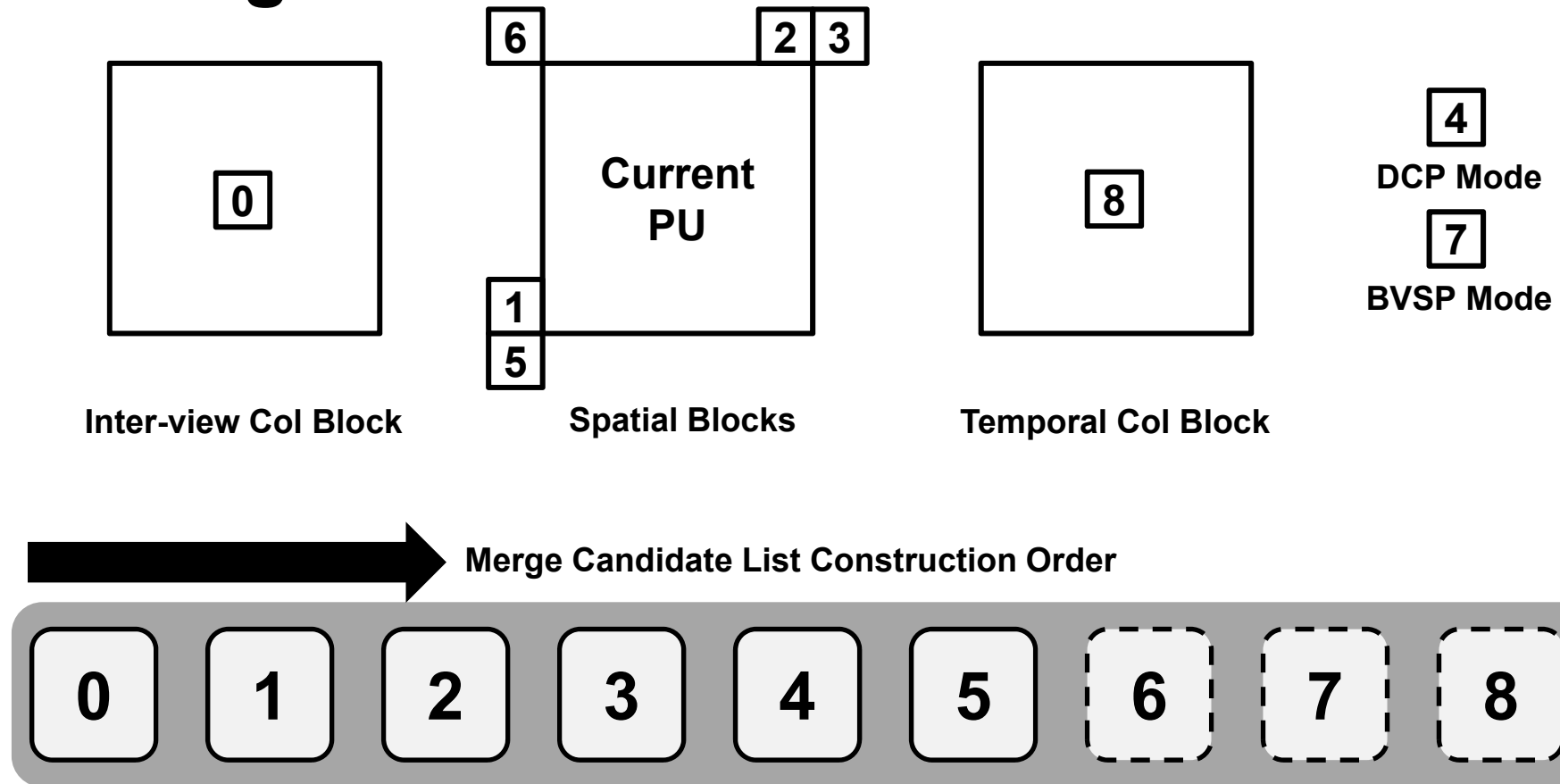
**Taesup Kim, Junghak Nam, Sehoon Yea**  
**LG Electronics**

**Apr. 2013**



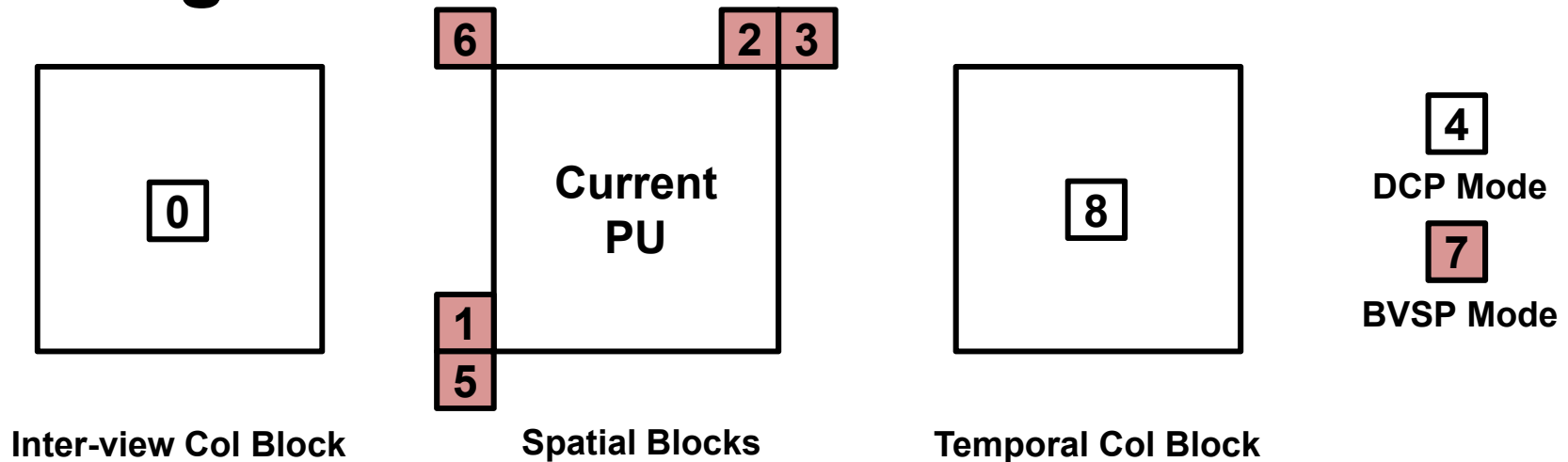
# Introduction

- Merge Candidate List Construction



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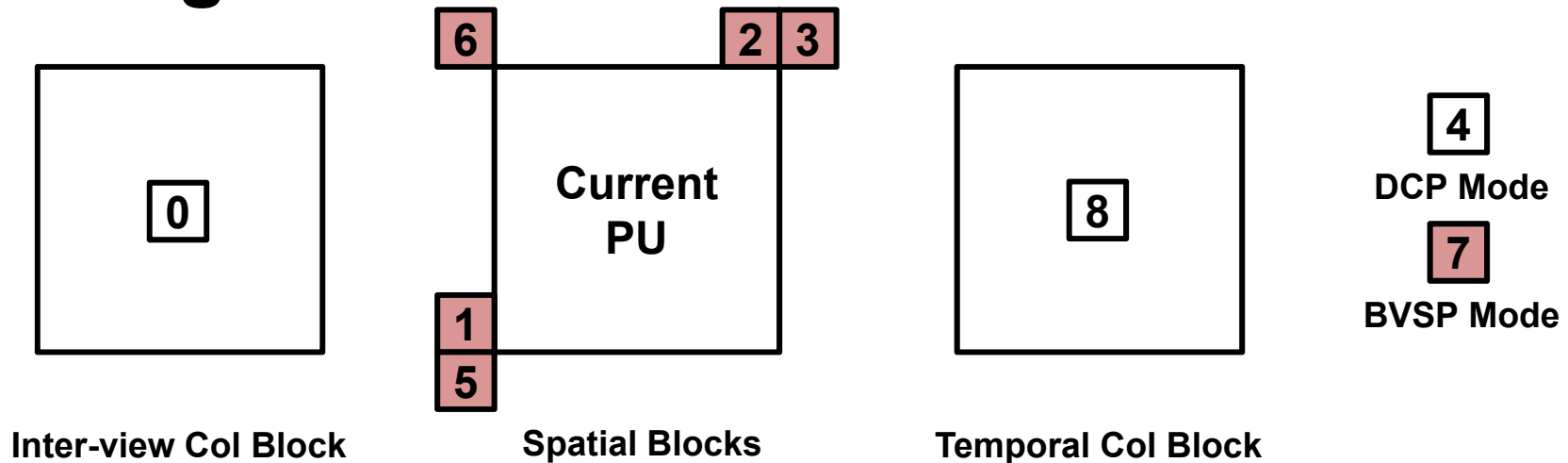


## BVSP Mode in Merge Candidate List



# Introduction

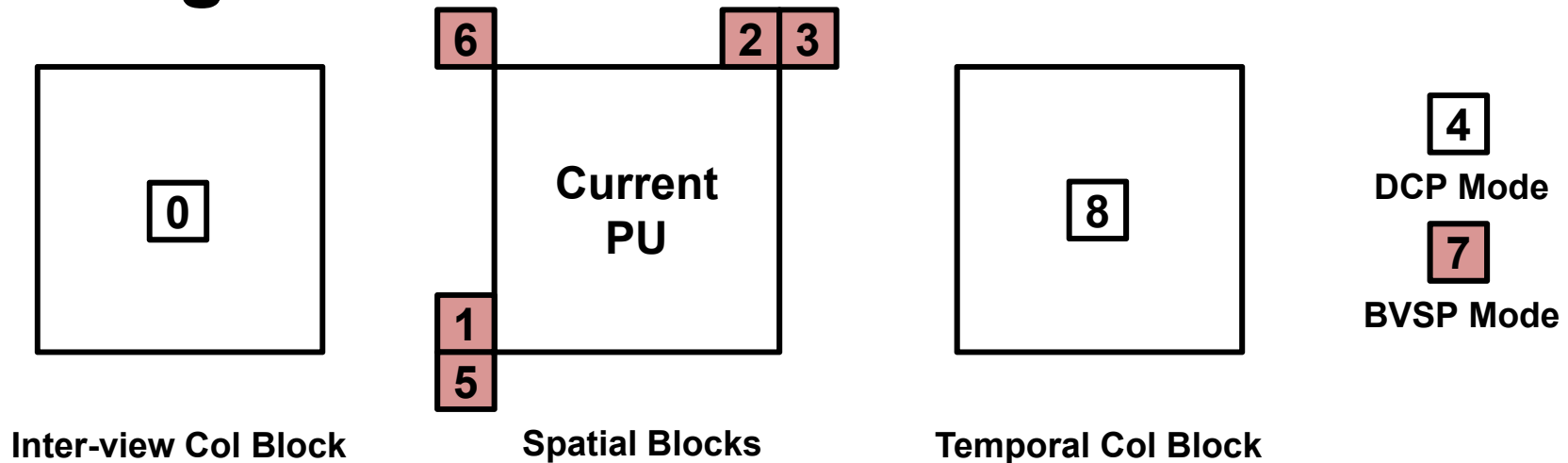
- Merge Candidate List Construction



if (# of BVSP mode in list==0 && Current block==BVSP mode)  
→ **Insert(or inherit) BVSP mode using DoNBDV**

# Introduction

- Merge Candidate List Construction



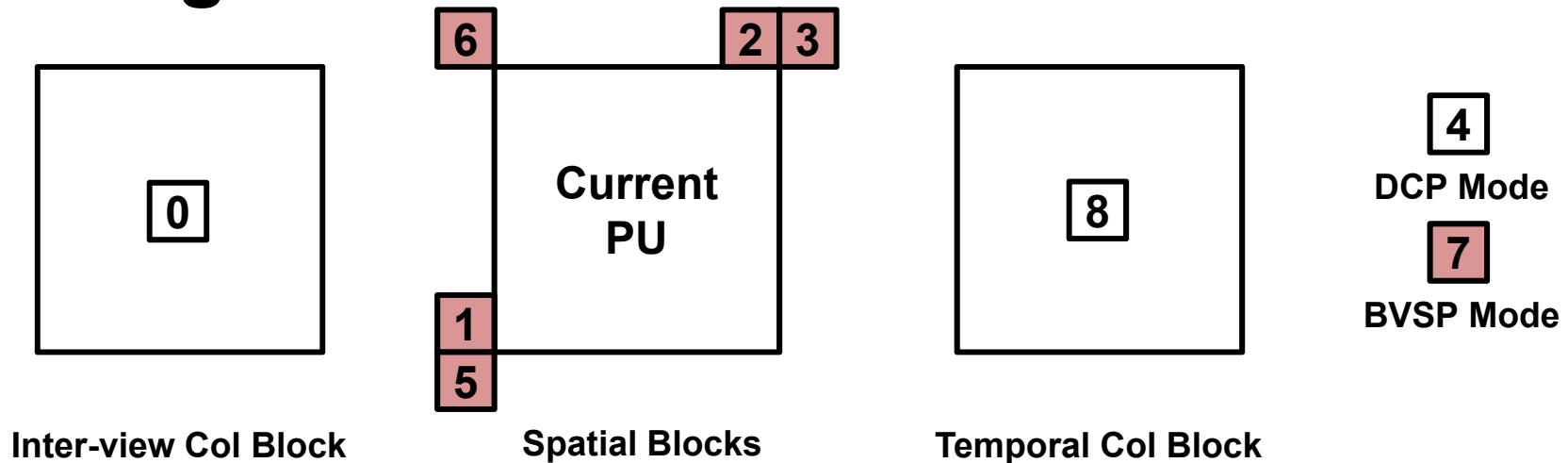
**BVSP Mode in Merge Candidate List**

→ **BVSP mode not guaranteed to be in list**

→ **Only single BVSP mode in list**

# Proposed Method

- Merge Candidate List Construction

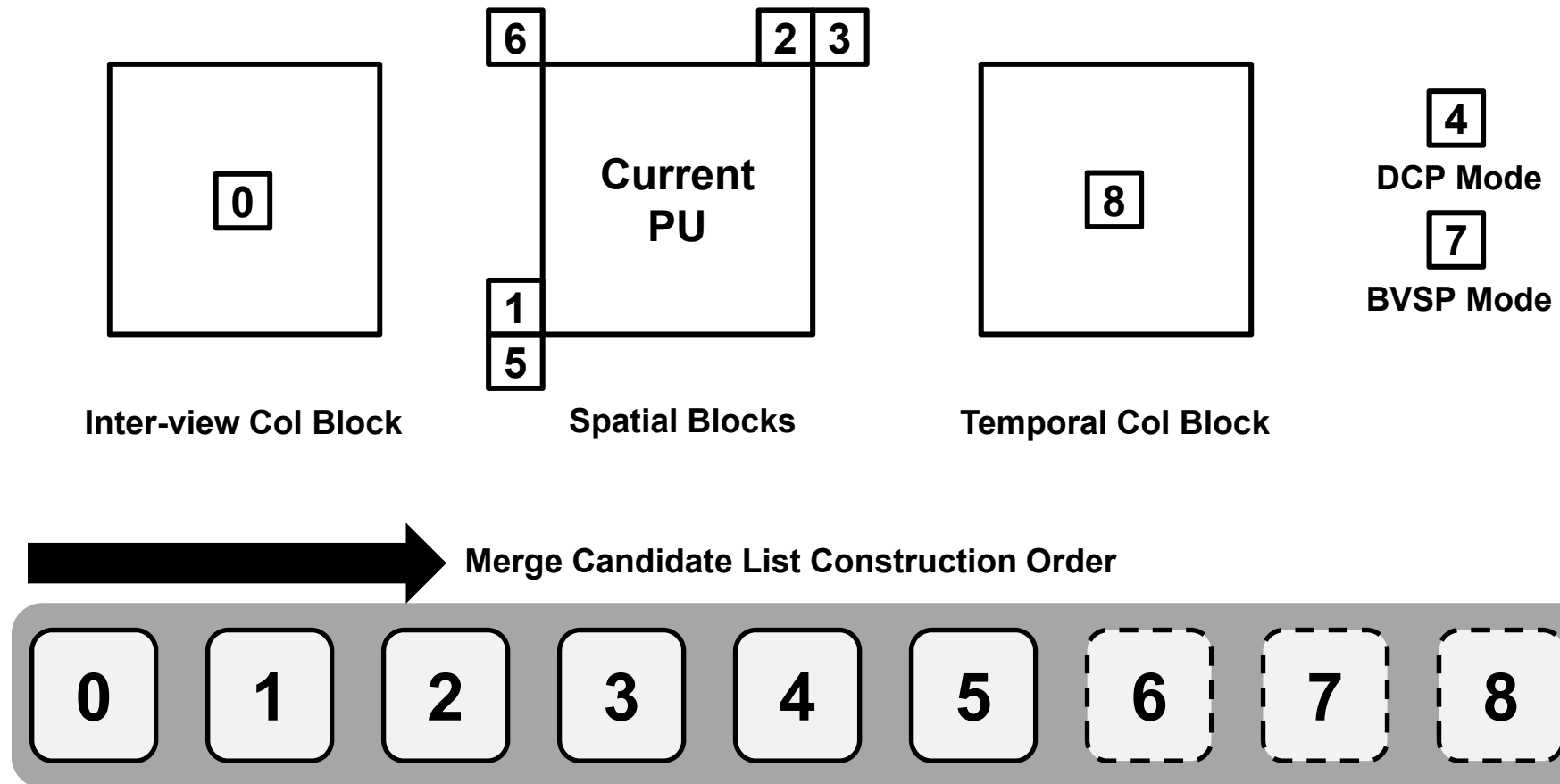


**BVSP Mode in Merge Candidate List**

- **BVSP mode not guaranteed to be in list**
- **Only single Multiple BVSP modes in list**

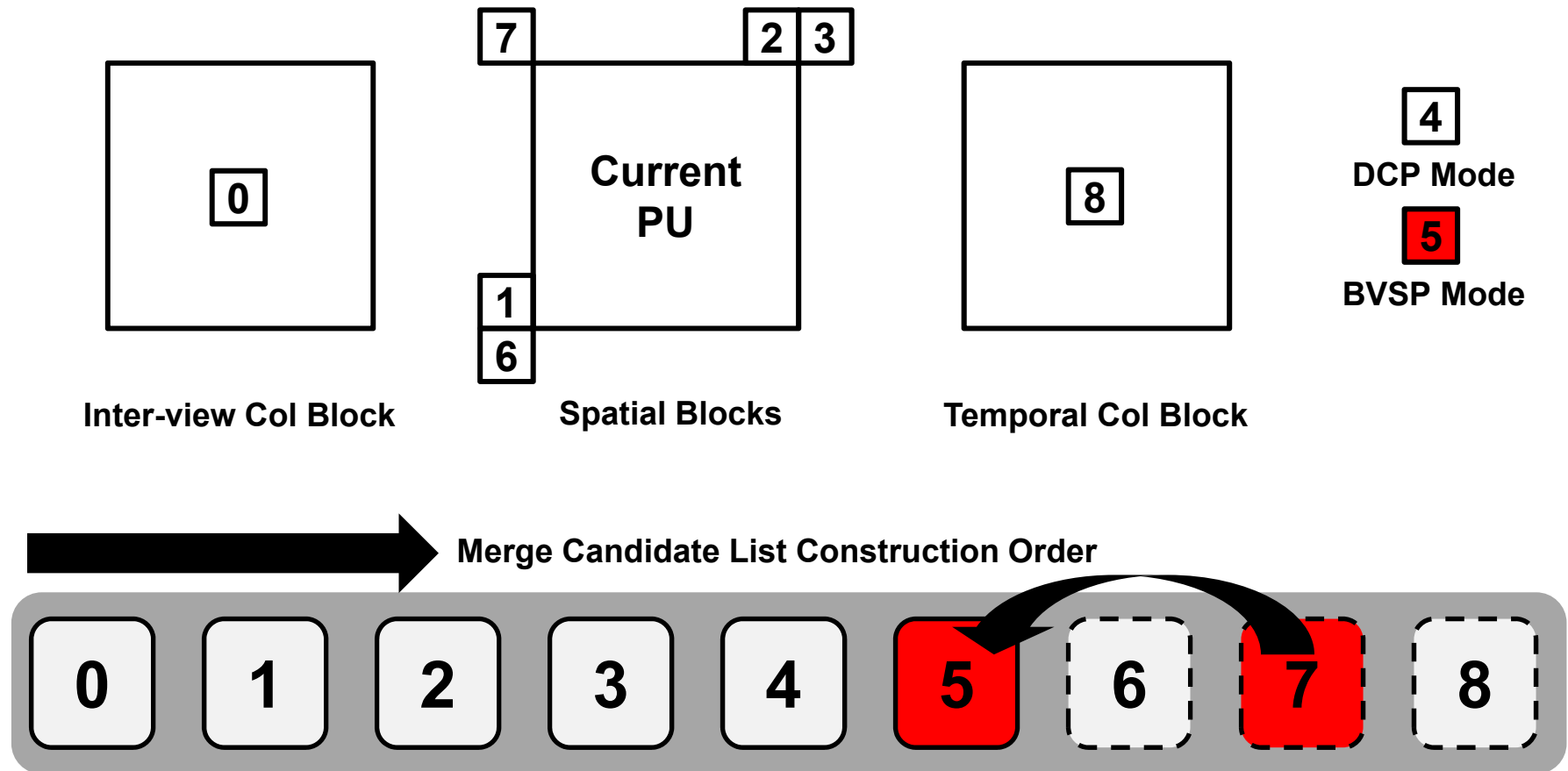
# Proposed Method

- Modifying Merge Candidate List Construction Order



# Proposed Method

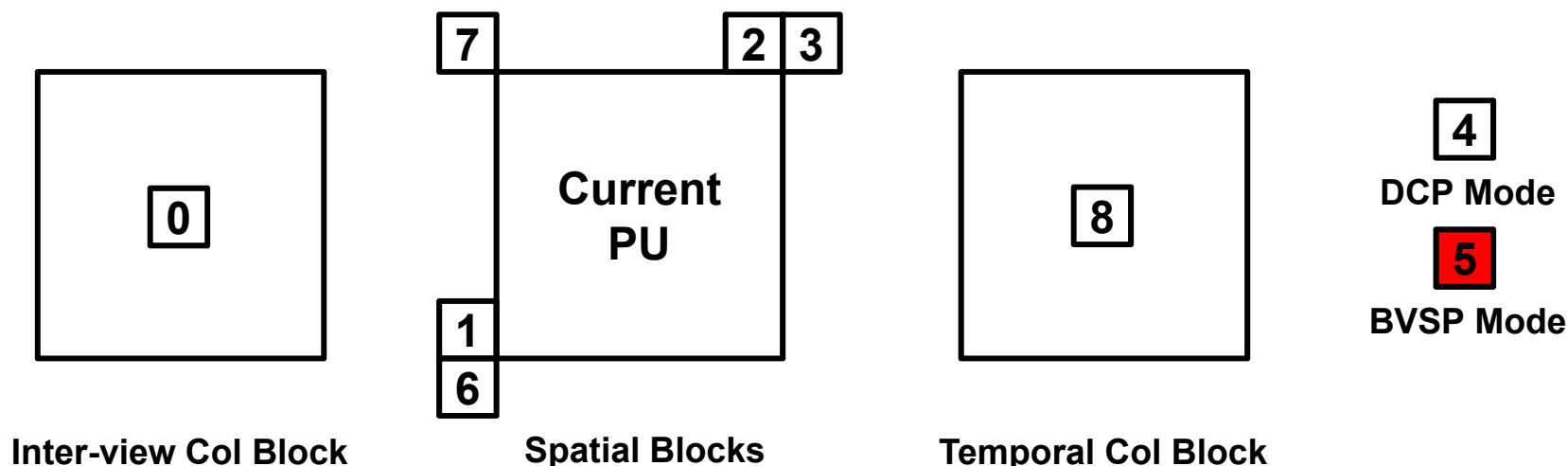
- Modifying Merge Candidate List Construction Order





# Proposed Method

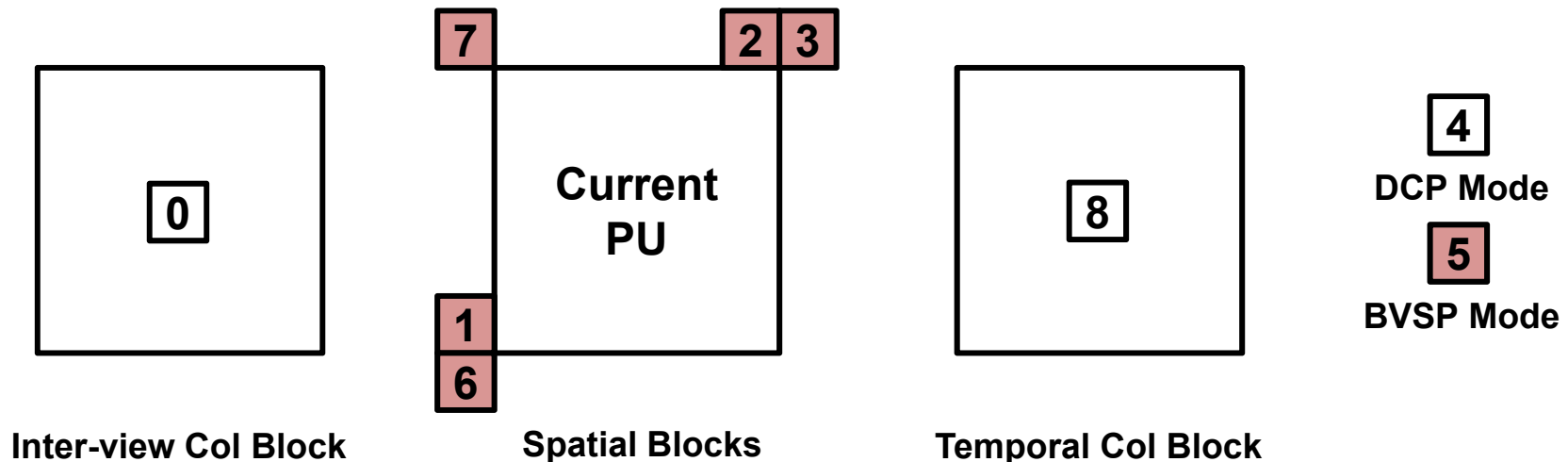
- Modifying Merge Candidate List Construction Order



→ **Guarantee at least one BVSP mode to be in list**

# Proposed Method

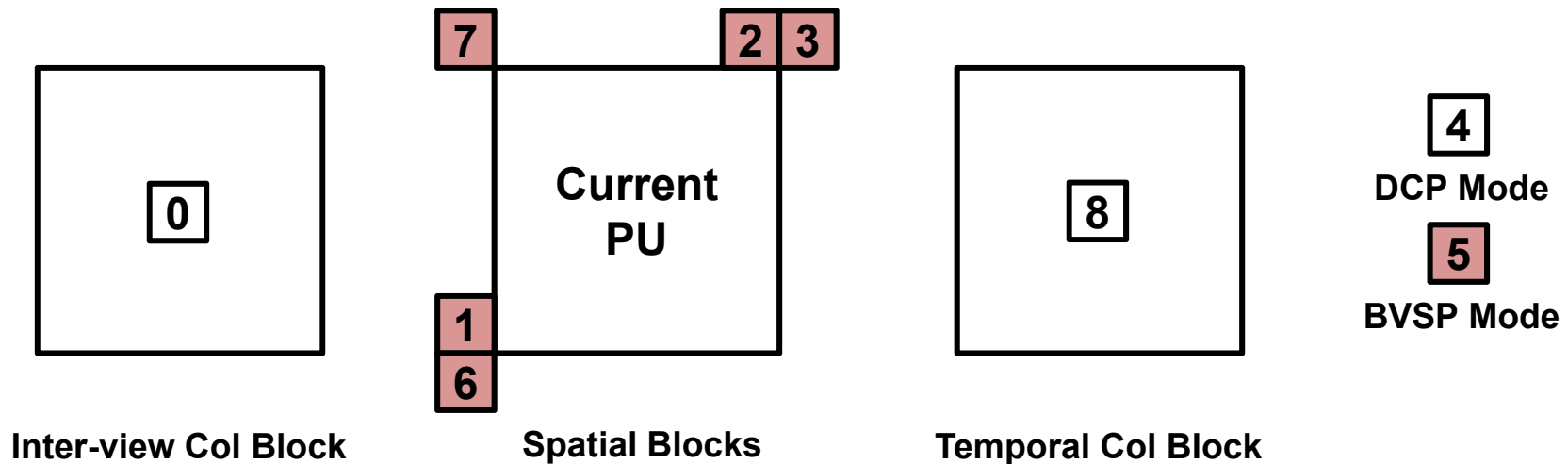
- Inheriting BVSP Mode from Neighboring Blocks



if (~~# of BVSP mode in list == 0~~ && Current block == BVSP mode)  
 → **Insert(or inherit) BVSP mode using corresponding DV**

# Proposed Method

- Inheriting BVSP Mode from Neighboring Blocks



→ Multiple BVSP modes w/ different DVs in list  
(Similar to other modes)

# Simulation Results

- **Modifying Merge Candidate List Construction Order**

	video 0	video 1	video 2	video PSNR / video bitrate	video PSNR / total bitrate	synth PSNR / total bitrate	enc time	dec time	ren time
Balloons	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	99.5%	100.4%	104.0%
Kendo	0.0%	0.1%	0.2%	0.1%	0.1%	0.1%	99.6%	103.1%	102.8%
Newspaper_CC	0.0%	0.1%	0.2%	0.1%	0.1%	0.1%	99.8%	104.2%	100.4%
GT_Fly	0.0%	-0.6%	-0.6%	-0.1%	-0.1%	-0.1%	100.2%	103.1%	100.7%
Poznan_Hall2	0.0%	-0.4%	0.3%	0.0%	0.0%	0.1%	100.2%	102.9%	99.7%
Poznan_Street	0.0%	-0.2%	0.0%	0.0%	0.0%	0.0%	100.2%	108.2%	99.4%
Undo_Dancer	0.0%	-0.5%	-0.6%	-0.1%	-0.1%	-0.2%	100.0%	99.9%	97.2%
1024x768	0.0%	0.1%	0.2%	0.1%	0.1%	0.1%	99.7%	102.6%	102.4%
1920x1088	0.0%	-0.4%	-0.2%	-0.1%	-0.1%	0.0%	100.1%	103.5%	99.3%
<b>average</b>	<b>0.0%</b>	<b>-0.2%</b>	<b>-0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>99.9%</b>	<b>103.1%</b>	<b>100.6%</b>

# Simulation Results

- Inheriting BVSP Mode from Neighboring Blocks

	video 0	video 1	video 2	video PSNR / video bitrate	video PSNR / total bitrate	synth PSNR / total bitrate	enc time	dec time	ren time
Balloons	0.0%	0.0%	0.1%	0.0%	0.0%	-0.1%	99.7%	96.6%	101.1%
Kendo	0.0%	0.2%	0.3%	0.1%	0.1%	0.1%	100.0%	100.8%	99.9%
Newspaper_CC	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	100.1%	105.7%	99.8%
GT_Fly	0.0%	-0.8%	-0.5%	-0.1%	-0.2%	-0.1%	100.6%	100.3%	105.4%
Poznan_Hall2	0.0%	-0.2%	0.0%	-0.1%	-0.1%	-0.1%	100.2%	98.4%	101.5%
Poznan_Street	0.0%	-0.2%	0.0%	0.0%	0.0%	0.0%	100.3%	100.0%	101.3%
Undo_Dancer	0.0%	-0.8%	-0.9%	-0.2%	-0.2%	-0.6%	100.2%	98.4%	98.7%
1024x768	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	99.9%	101.0%	100.2%
1920x1088	0.0%	-0.5%	-0.4%	-0.1%	-0.1%	-0.2%	100.3%	99.3%	101.7%
<b>average</b>	<b>0.0%</b>	<b>-0.3%</b>	<b>-0.1%</b>	<b>0.0%</b>	<b>-0.1%</b>	<b>-0.1%</b>	<b>100.1%</b>	<b>100.0%</b>	<b>101.1%</b>

# Summary

- **Inherit BVSP mode appropriately from neighboring blocks.**
  - Multiple BVSP mode candidates.
  - Guarantee at least one BVSP mode.
- **Result on 0.1% BD-rate gain.**