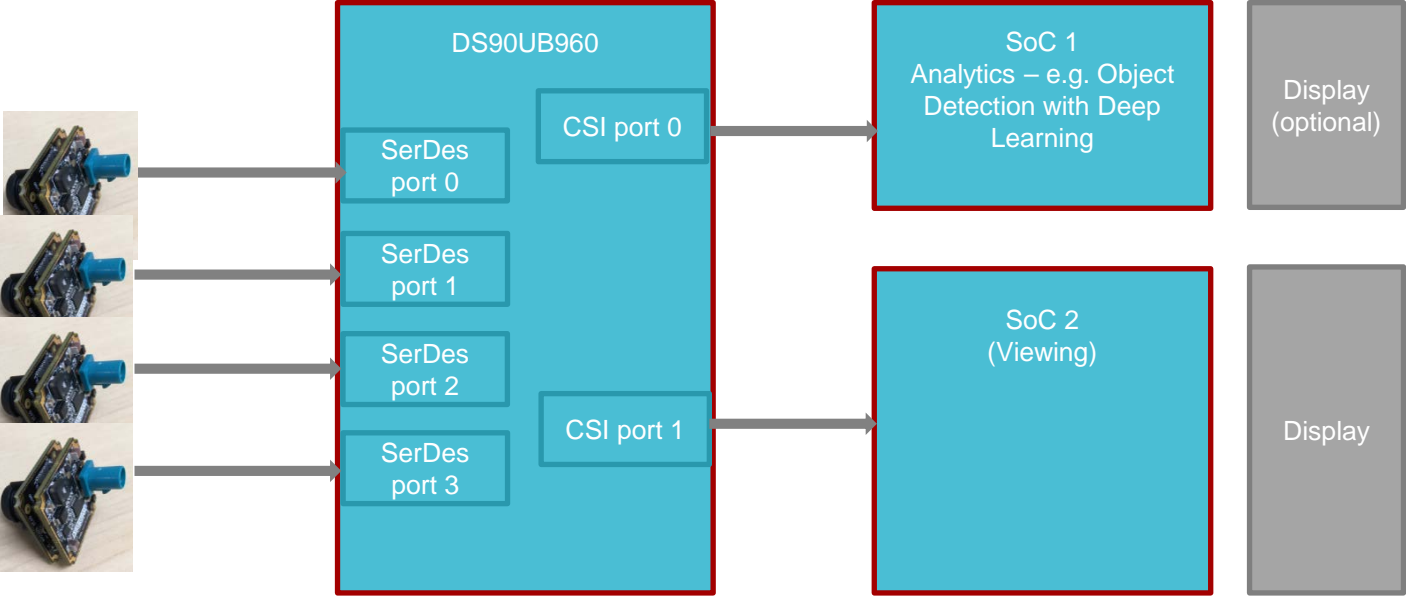




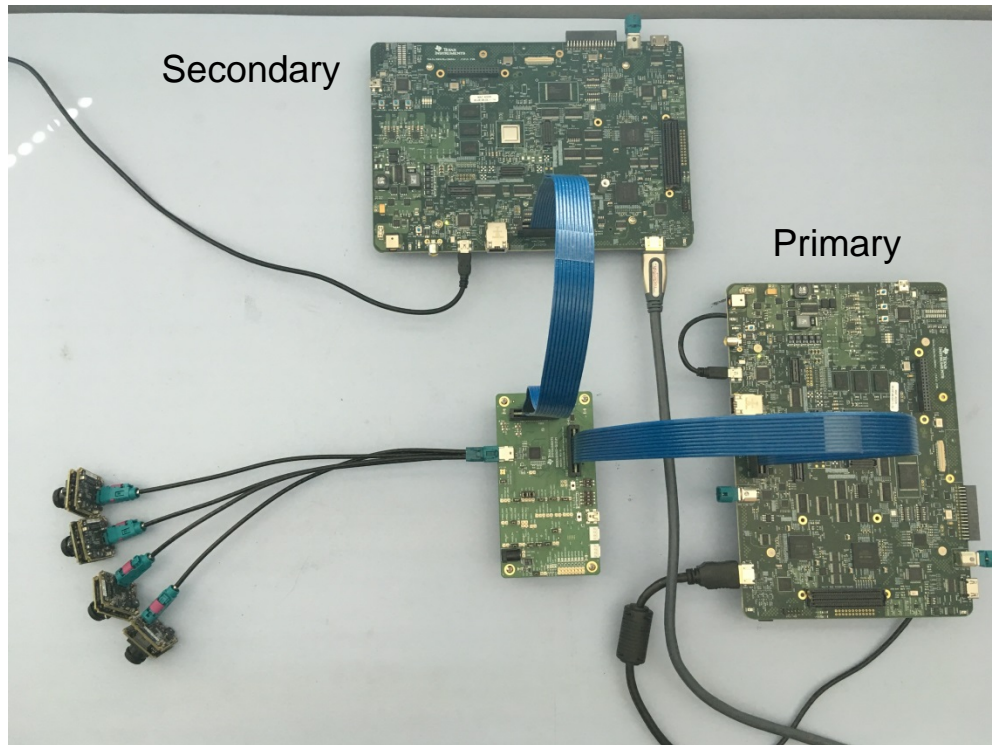
Multi-camera replication: Demo system HW & SW setup



Replication use case: View vs analyze



Demo system building blocks



TI EVMs:

UB960 <http://www.ti.com/tool/ds90ub960-q1evm>

TDA2P or TDA3 EVM (with CSI-2 connector)

<http://www.ti.com/tool/TDA2PXEVMM>

<http://www.ti.com/tool/TDA3XEVM>

MIPI cables:

http://suddendocs.samtec.com/catalog_english/hqdp.pdf

(pictured HQDP-020-20.00-TEU-TED-5)

Cameras: 4 x MARS AR0143

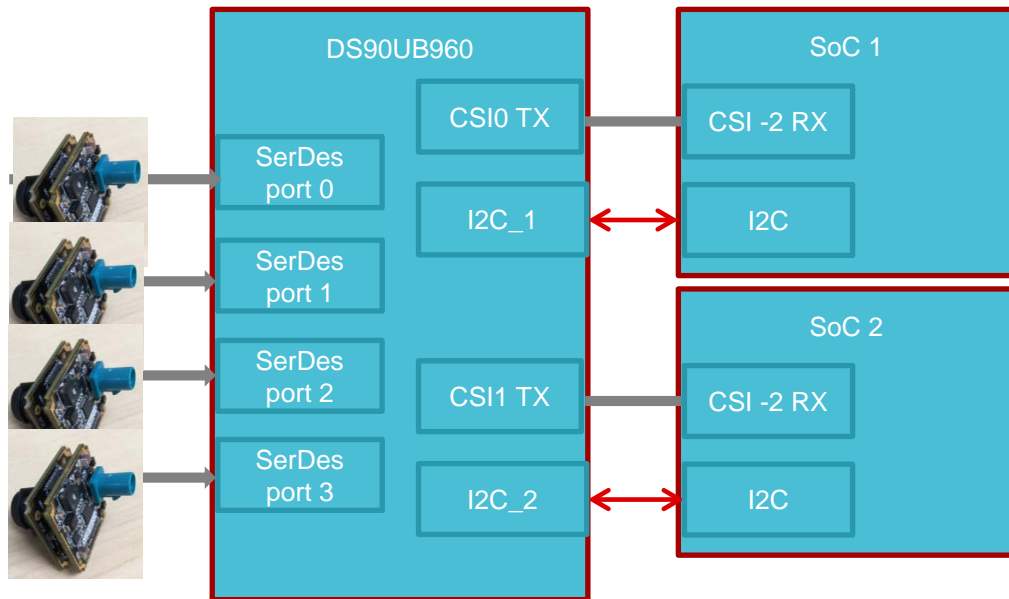
2 HDMI monitors (or 1 with multiple inputs)

TDA VSDK software (v 3.06):

<http://www.ti.com/tool/PROCESSOR-SDK-TDAX>

Initialization considerations

- Two SoCs sharing the same resources via I2C buses:
 - UB960
 - Cameras (Serializers + Sensors)
- Both SoCs have access through I2C
 - Primary I2C bus pinned out through CSI0 MIPI connector
 - Secondary I2C bus pinned out through CSI1 MIPI connector
- Primary vs secondary I2C bus on UB960:
 - Only primary bus can access the digital reset register
 - Both can access back channel (one at a time) via BCCx_MAP register fields
- CSI RX (SoC side) needs to be powered up before CSI TX (UB960)





Software modifications

- Vision SDK version 3.06:
<http://www.ti.com/tool/PROCESSOR-SDK-TDAX>
- Working demo with least modifications:
 - Two different images on two TDA3x EVMs
 - Secondary (via CSI1) starts running use case before Primary (via CSI0)
 - Secondary EVM: Skip sensor initialization: comment out the following line:

```
app_utils.c: // appStartISSSensor(pObj, cnt);
```

- Primary EVM: add UB960 register writes

```
iss_sensor_ar0143.c    gAppIssUtilsUb960Cfg_MARS_AR0143[]  
{0x32, 0x12, 0x10}, // select CSI1 for register read/write  
{0x33, 0x03, 0x10}, // CSI enable, 4 lanes  
{0x21, 0x83, 0x10}, /* enable replicate mode */
```



Live Demo