|  |  |
| --- | --- |
| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11**  10th Meeting: Stockholm, SE, 11–20 July 2012 | Document: JCTVC-J0126 |

|  |  |  |  |
| --- | --- | --- | --- |
| *Title:* | **Code for verifying the coding tree block raster, tile and z-scan processes** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Information | | |
| *Author(s) or Contact(s):* | Adarsh K. Ramasubramonian Ye-Kui Wang  5775 Morehouse Drive, San Diego, CA 92121-1714 USA | Tel: Email: | 1-858-658-5804 [aramasub@qualcomm.com](mailto:aramasub@qualcomm.com)  1-858-651-8345 [yekuiw@qualcomm.com](mailto:yekuiw@qualcomm.com) |
| *Source:* | Qualcomm Incorporated | | |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Abstract

There have been successive corrections made to the pseudocodes for the coding tree block raster scan, tile scan and z-scan processes in Subclauses 6.5.1 and 6.5.2. A C-code was created to verify the pseudocodes. After final bug fixes, the code has verified that the processes currently specified in WD7 are now indeed correct. This document provides, for archive purpose, the C-code. The code is provided as an attachment with this document, along with output of a few test cases.

# Introduction

The LCU (strictly speaking, coding tree block) and SCU (strictly speaking, minimum coding block) addresses are derived based on the tile-scan order of the LCUs. Subclauses 6.5.1 and 6.5.2 of WD7 present derivation of variables associated with these addresses. The variable ctbAddrRStoTS[ ctbAddrRS ] denotes the mapping of the LCU address in the raster-scan order to tile-scan order. The variable ctbAddrTStoRS[ ctrAddrTS ] denotes the mapping of LCU addresses from tile-scan order address to the raster-scan order. The variable minCbAddrZS[ x ][ y ] denotes the address of the SCU at location ( x, y ), taken in units of minimum CBs, in the z-scan order assuming that the LCUs are in the tile-scan order. Furthermore, Subclause 6.5.1 also includes the process for derivation of the tile ID for each coding tree block.

There have been successive corrections made to the above derivation processes. For verification of the processes, we created a C-code, through which some more bugs were identified and fixed. The finally bug-fixed pseudocodes for these derivation processes currently in WD7 should now be indeed correct. For archive purpose, the code as well as sample output of the code denoting the values of the above variables for typical cases are provided in the attachment of this document.

# Patent rights declaration(s)

**Qualcomm Incorporated does not have current or pending patent rights relating to the technology described in this contribution.**