**DAILY ASSESSMENT FORMAT**

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| **Date:** | **03/07/2020** | **Name:** | **Nayanashree K S** |
| **Course:** | **IIRS Outreach Program on Satellite Photogrammetry** | **USN:** | **4AL16EC042** |
| **Topic:** | **Photogrammetric products from satellite stereo images** | **Semester & Section:** | **8th A** |
| **Github Repository:** | **Nayana\_online** |  |  |

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| **AFTERNOON SESSION DETAILS** |
| **Image of session** |
| **Report**  **ORTHORECTIFICATION**  It is the process of removing the effects of image perspective (tilt) and relief (terrain) effects for the purpose of creating a planimetrically correct image. The resultant orthorectified image has a constant scale wherein features are represented in their 'true' positions  **ERRORS REMOVED DURING ORTHO-RECTIFICATION**   * Camera and sensor orientation * Lens Distortion * Topographic relief displacement * Earth curvature   **ALGORITHMS FOR DIGITAL ORTHO-RECTIFICATION**   * Poly nomial rectification * Projective transformation * Differential rectification   **POLYNOMIAL RECTIFICATION:**  In case of a flat terrain the orthophotos can be generated using simple rectification proce-dfirtscStiip e rectification is a procedure which removes only the effect of tilt.  **PROJECTIVE TRANSFORMATION**  It is projection of a tilted image into a tilt free image of a desired scale. It is mathematically equivalent to projective transformation  **ALGORITHMS FOR DIGITAL ORTHO-RECTIFICATION**  **DIFFERENTIAL RECTIFICATION:**   * Differential rectification is a well-known standard procedure in aerial photogrammetry for generation of orthophotos in a non flat terrain. * In order to apply this method to a single image the parameters of the interior and exterior orientation of the camera as well as the underlying digital terrain model (DTNI) have to be known * Digital rectification assigns a gray value to each grid-element of the digital elevation model (DENI). so that both elevation and density of the surface are stored at the same planimetric location * The indirect method for differential digital orthorectification is based in the well-known collinearity principle, which states that the projection center of a central perspective image (CP), an object point (P), and its photographic image (p) lie upon a straight line   **ADVANTAGES OF DIGITAL ORTHOPHOTOS**   * The geometric accuracy is higher since a very close mesh at points is used to approximate the ground surface. * Image content can be modified quite simply by contrast manipulation of the densities and colours. * An elegant matching of densities at the edges of the neighbouring images in an ortho-photo mosaic can be achieved. * Further improvements, such as edge enhancement can be introduced by appropriate filtering. , * The digital orthophoto can be stored as level of information in a GIS * Digital orthophoto can be analysed by the methods of multispectral classification, image segmentation etc. |