# TORS FOR
# CLOUD/ONLINE SATELLITE IMAGERIES FOR KPKHYBER PAKHTUNKHWA PROVINCE

## 1.1 Solution Requirements:

The Solution proposed should offer the most accurate and up-to date satellite imagery available of the KPK Province meeting the strict accuracy, currency and aesthetics required for planning, monitoring and tracking change in defined areas of interest to provide highest quality result. Processing, updating and hosting will be provided entirely by the bidder, hosted and served over a distributed cloud network, allowing access from anywhere in the world or static satellite imageries as per requirement of the the client.

The solution should allow end users to access a complete imagery layer base map that enables bundling of project-specific information with other raster / vector products or static satellite imageries as per requirement of the client. The data provided should be GIS application-ready.

Under the scope of this proposal:

1. Highest resolution (at least 1m GSD) commercially available satellite data package to download or static satellite imagery as per requirement of client and utilize satellite imagery over the KPK Province for the Urban Policy Unit, P&D Departments projects, legally, for following objectives:

    a. Digitization of land features
    b. Geo-referencing of other raster datasets
    c. Geo-referencing of old images
    d. Image processing and analysis
    e. Online publishing

2. User name and password protected software package should allow Urban Policy Unit to download/acquire historic (past 10 years) and current ortho-rectified satellite images (most recent images of that particular satellite) in actual spatial resolution through searching and cataloguing with metadata information OR demand of satellite imageries.

3. The company should also provide division wise satellite images of Khyber Pakhtunkhwa Province, by feature to feature image match and deliver the images to Urban Policy Unit on defined time lines.

4. The imagery provided should be highly accurate orthorectified and with a resolution better than (1) meterand must have multi-spectral bands.

## 1.2 Imagery Specification

The following table summarizes the imagery specification for the proposed solution.

| Proposed Solution Image Attributes | |
|---|---|
| **Sensor** | High Resolution Imagery |
| **Ground Sampling Distance** | Less than 1 m |
| **Maximum Off Nadir Angle** | <30$^{o}$ |
| **Cloud Cover Restrictions** | <20% |
| **Sun Elevation** | Satellite: >30$^{o}$ |
| **Accuracy Tolerance Range (CE90)** | Better than 50m |

## 1.3 Image Delivery and Workflow Integration

The proposed solutionshould enable maximum flexibility to access high resolution imagery, providing a wide range of compressed and uncompressed formats that can be integrated and downloaded into nearly any kind of geospatial application.

- Compatible with already developed DPMS and other applications.
- Supports major OGC standards – WMS, WMTS, WCS, WFS.
- Delivery of ArcGIS Server Services and Custom Delivery Protocols – REST/SOAP
- Compressed formats include JPEG, PNG, geospatial PDF, MrSID, and more
- Uncompressed format includes GeoTIFF
- Native compatibility for KML-based Earth Viewers, including Google Earth
- ImageConnect plug-in delivers geo-referenced, multi-temporal imagery into ArcGIS application.
- Downloadable/static satellite imageryof high resolution geo-referenced imageries in GeoTIFF and IMG formats.
- Downloadable imagery of high resolution imagery should be multi-temporal imagery of various periods as per client requirements
- Imagery service must be available 24/7.
- Bidder will provide technical support regarding client queries