

# DACUM Research Chart for Geospatial Intelligence Specialist

## DACUM Panel

David Bendickson, Emergency Management Program Coordinator, Minnesota National Guard, MN  
Jeremy Peichel, (On-line) Watershed Forestry Specialist, USDA Forest Service, Northeastern Area, MN  
Matthew Stanger, County Executive Director, USDA Farm Service Agency, Mountrail County, ND  
Matthew Strasner, RQ-4 Block 40 Sensor Operator, Grand Forks, ND  
Mike Staedy, GIS Technician, Utility infrastructure mapping, Centerpoint Energy, Minneapolis, MN  
Travis Voels, Senior Space Operations Officer (Retired), ARNG 34th IN Div., Minneapolis, MN  
Trey Steele, GIS Analyst, Traffic Department, Fastenal, Winona, MN

## DACUM Facilitators

John Johnson, Facilitator  
Havie Lee, Recorder

## Sponsored by:

**The National Science Foundation;  
Advance Technology Education**



*This material is based upon work supported by the National Science Foundation under Grant No. DUE 1700615. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.*

## Produced by:



*Northland Community & Technical College*



*The National Geospatial Technology Center of Excellence*

**Date: September 11<sup>th</sup> - 12<sup>th</sup>, 2018**

# DACUM Research Chart for Geospatial Intelligence Specialist

Duties		Tasks												
<b>A</b>	<b>Manage Geospatial Projects</b>	A1 Respond to Requests for Information	A2 Identify Stakeholders (Supervisors, IT, End Users)	A3 Identify Resources	A4 Conduct Risk Assessment (risk/reward, evaluation, mitigation, hazards)	A5 Prioritize Projects Activities (Time cost, scope)	A6 Develop a Project Plan (benchmarks, deliverables, timeliness, stakeholders)	A7 Delegate Workload	A8 Mentor Participants	A9 Write Grants	A10 Document Project Progress (life cycle, executive summary, reports)			
<b>B</b>	<b>Plan Reconnaissance (Recon) Missions</b>	B1 Identify Optimum Route (weather, R.O.Z)		B2 Coordinate ATC Tower Hand-Offs (frequencies)		B3 Establish Diplomatic Clearances	B4 Verify Collection Plan (for changes, on & off station times)	B5 Establish Air Tasking Order (A.T.O)	B6 Determine Take-off & Landing Times	B7 Deconflict Airspace (aircraft)				
<b>C</b>	<b>Prepare Data</b>	C1 Collect Pertinent Data (hard & soft data, querying, scripting, SQL, data mining)		C2 Verify Data Release Ability (legal, classification & restrictions)		C3 Verify Data Accuracy (validate data - usability)		C4 Establish Chain of Custody (documentation)		C5 Validate Standing Operations Plan	C6 Define File Structure Standards (database inter-operability, naming conventions, comingling data)		C7 Project Data to Correct Coordinate System	C8 Convert File Formats (CSV to Excel)
<b>C</b>	<b>Prepare Data (con't)</b>		C9 Ortho-Rectify Imagery	C10 Import Data (digitize, convert)	C11 Mass Update Attributes	C12 Format Target Deck	C13 Clip Data to Spatial Extent (scope)	C14 Geocode Address Points	C15 Create/Edit Spreadsheets	C16 Build Mission Slides	C17 Create Metadata	C18 Digitize Data (heads-up)		
<b>D</b>	<b>Develop Geospatial Products</b>	D1 Create/Edit Feature Data	D2 Conduct Attribute Queries	D3 Update Attributes	D4 Conduct Statistical Analyses	D5 Create Statistical Reports (aggregate)		D6 Conduct Spatial Queries	D7 Join Spatial Data (combine features)		D8 Join Tables	D9 Create Routes	D10 Evaluate Routes	D11 Modify Routes
<b>D</b>	<b>Develop Geospatial Products (con't)</b>		D12 Prepare Site Analyses (operational impacts)		D13 Create Layers	D14 Create/Update Maps								
<b>E</b>	<b>Develop Remote Sensing Data</b>	E1 Calibrate Radar	E2 Create Images	E3 Evaluate Image Quality (scrubbing)	E4 Synthesize Radar	E5 Identify Metallic Items with Radar	E6 Analyze Full Motion Video	E7 Determine Stress Vegetation	E8 Identify Dynamic Changes	E9 Identify Environmental Changes	E10 Conduct Materials Identification (HSI)	E11 Conduct Mensurating Analyses	E12 Identify Hot Spots (satellite sensors)	E13 Create Terrain Categorization (TERCAT)
<b>E</b>	<b>Develop Remote Sensing Data (con't)</b>		E14 Create High Resolution Elevation Maps (LIDAR)		E15 Identify Elevation Changes (LIDAR, SRTM)		E16 Identify Underground Features (SPR)	E17 Conduct Damage Assessment						
<b>F</b>	<b>Share Data</b>	F1 Export Maps to Required Format (PDF, JPEG)		F2 Export Data	F3 Save Files to Shared Drives	F4 Upload Data to FTP Sites	F5 Publish GIS Services (to database)	F6 Create Imagery Services	F7 Create PowerPoints	F8 Print Maps	F9 Operate Plotters	F10 Scan Data	F11 Modify/Validate Scanned Data	
<b>F</b>	<b>Share Data (con't)</b>		F12 Initiate Quality Shift Change (human capital)		F13 Communicate by Phone	F14 Communicate by Email	F15 Communicate by Chat Messages	F16 Communicate by Video Conferencing						
<b>G</b>	<b>Manage Technology</b>	G1 Verify Hardware Capabilities (system health)		G2 Configure Networks	G3 Map Network Drives	G4 Update Software	G5 Maintain Product Licenses	G6 Define Roles & Permissions	G7 Train Employees	G8 Maintain Plotters				
<b>H</b>	<b>Maintain Databases</b>	H1 Create Database Documentation	H2 Verify Back-Up Procedures	H3 Back-Up Data	H4 Define Archive Procedures (imagery)		H5 Diagnose and Repair Database Errors (query)		H6 Update Map Layers	H7 Compress Data (for distribution)				
<b>I</b>	<b>Pursue Professional Development</b>	I1 Develop Professional Growth Plans (cross-train, peer review)		I2 Complete Required Training	I3 Obtain and Maintain Relevant Certifications	I4 Attend Conferences (includes distance learning)		I5 Deliver Presentations to Peers	I6 Review Industry Publications					

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## General Knowledge and Skills

ArcGIS  
Cartography  
Compiling data sources  
Coordinate Systems  
Core business principles  
Data limitations  
Data origin  
Datums & Projections  
Geography  
How data works together  
Impact of weather on platforms (technology)  
Industry rules & regulations  
Intermediate computer skills  
Latitude & longitude  
Mapping software  
Military grid  
Satellite platform capability  
Scripting (Python)  
SQL  
Topography  
Vendor services (e.g. satellite images – historical, UAV)

## Worker Behaviors

Analytical  
Detail oriented  
Driven  
Patient  
Persistent  
Poised  
Problem solving  
Professional  
Quick thinking  
Resourceful  
Self-confident  
Team player  
Thorough

## Acronyms

AOB – Air Order of Battle  
ATO – Air Tasking Order  
EOB – Electronic Order of Battle  
GOB – Ground Order of Battle  
HSI – Hyperspectral Imagery  
LIDAR – Light Detection and Ranging  
MOB - Maritime Order of Battle  
MODIS – Moderate Resolution Imaging Spectroradiometer  
MSI – Multispectral vs Imagery  
NIR – Near Infrared  
PED – Processing Exploitation Dissemination  
ROZ – Restricted Operating Zone  
SQC – Statistical Quality Control  
SQL – Structured Query Language  
SRTM - Shuttle Radar Topography Mission  
SWIR – Short Wave Infrared  
VIIRS – Visible Infrared Imaging Radiometer Suite

## Tools, Equipment, Supplies and Materials

<b>SOFTWARE</b>	
Adobe Reader	Google Earth
ArcGIS	Google Suite
ArcGIS Collector	iCloud
AutoCAD	LizardTech
Avenza Maps	Microsoft Suite
DISCO	PC Miler
ENVI	QT Modeler
ERDAS	SharePoint
FileNet	SOCET GXP
GE Smallworld	

## Future Trends and Concerns

Algorithmic design  
Cloud based & remote GIS services  
Data privacy  
Digital mapping  
Growth of non-traditional collectors  
Growth of social media  
Growth of unmanned aerial vehicles (UAV's)  
Higher quality and accuracy  
Machine learning  
Personal surveillance systems  
Phishing spam emails  
Story maps  
Technology communications  
Trend analysis