

# SURVEY UNITS/DELIVERY UNITS- WHAT ARE THEY AND WHAT DO THEY MEAN FOR YOUR PROJECT?

John Jackson  
USACE EM CX

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Definitions and purpose for the survey unit (SU) and delivery unit (DU)

A few basic examples

What does this mean for the Project Manager and Stakeholders?

Questions



## SURVEY UNIT

- A *portion of the site* for which geophysical survey data and other field observations and measurements, *including quality control (QC) results and results for blind QC seeds and quality assurance (QA) seeds, will be collected, verified, validated, and reported as a unit, for evaluation and use by the project team.* Survey units are established by the project team during project planning and *commonly tied to contractual payment milestones.* The survey unit is *not necessarily a geographically contiguous unit*, and, in rare cases, it may not be required that all coverage metrics are met, as long as any *data gaps are identified and addressed in a future survey unit.* For investigations conducted in phases, survey units for one phase may or may not be the same as those for a different phase.

Historical Synonyms: Lot, “X time-based deliverable (i.e., weekly),”

## DELIVERY UNIT

- *One or more survey units grouped* into a single unit for the purpose of conducting the data usability assessment. *Final verification and validation digs are tied to the delivery unit.* Delivery units will encompass one or more *contiguous geographic areas for which 100% of relevant coverage metrics have been achieved.* Delivery units are established by the project team during project planning. Smaller sites may have only one delivery unit per MRS while larger sites may have more.

Historical Synonyms: Lot, deliverable unit, decision unit



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# WHAT IS THE PURPOSE OF A SURVEY UNIT?

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## What is the “technical purpose?”

- Allows payment for **usable** data that:
  - May have been collected in a non-contiguous manner
  - Achieves all QA/QC requirements
  - Has coverage gaps for the SU’s geographic footprint
  - Has a future SU identified that will in-fill the coverage gaps (Example later)

## Zero guidance on **SU** size; project driven

- Can be as miniscule or large as project team prefers.
  - Keep in mind the larger the SU, the longer the client will need to review it
  - May become a data management nightmare

## In practice, the payment milestone plan really drives the survey unit

- How does the contractor want to get paid?



# WHAT IS THE PURPOSE OF A DELIVERY UNIT?



The Data Usability Assessment is tied to the DU

- On acceptance of the delivery unit by the client, the PDT can walk away from that geographic area hopefully assuming to never set foot in it again\* (during that CERCLA/Contractual phase)

Characteristics of a DU ready for acceptance

- All final QA/QC and Verification/Validation digs have been completed for all SUs within the contiguous geographic area of the DU
- All prior data coverage gaps have been covered and all inaccessibility data gaps have been documented and approved
- A 30-acre site may have 1 SU= 1 DU= 1 MRS or 2 SUs = 1 DU = 1 MRS
- A 3000-acre site may have 4 or 5 SUs per DU and 10 DUs per MRS (or similar)
  - We need to get smarter/better on this

\*unless a future DUA identifies a systemic failure that may affect this DU (please don't ask about prior contracts)





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# EXAMPLE #0

1 grid = 1 SU

X SUs = 1 DU

- Simple- we're not discussing this today other than we are absolutely NOT discouraging this approach if it makes sense for your project





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# EXAMPLE #1 (MORE COMMON FOR SMALL SITES)



Project with UltraTEM classifier and MPV. UltraTEM is primary tool, MPV is filling in data gaps.

- UltraTEM can be **survey unit 1 in delivery unit 1**
  - Gov QA's SU 1 and pays contractor
- MPV can be **survey unit 2 in delivery unit 1** filling in data gaps
  - Gov QA's SU 2 and pays contractor
- Intrusive investigation can be **survey unit 3 in delivery unit 1**
  - Gov QA's SU 3 and pays contractor
- Each of the above phases can (should?) have an interim/phased DUA
- Above is completed, project's verification/validation plan has separate procedures for both UltraTEM and MPV. Those digs are completed
- All of the above is wrapped up into the DU 1 final DUA
  - Gov QA's DU 1 and pays contractor

**PDT moves on to DU 2**



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## EXAMPLE #2 (MORE COMMON FOR LARGE SITES)



Project with UltraTEM classifier and MPV. UltraTEM is primary tool, MPV is filling in data gaps.

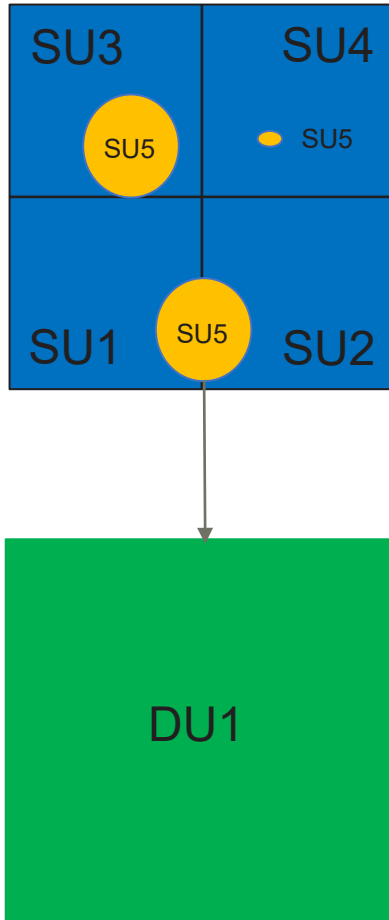
- UltraTEM can be **survey unit (1→20) in delivery unit 1**
  - Gov QA's SU 1-20 and pays contractor
- MPV can be **survey unit (21→31) in delivery unit 1 filling in data gaps**
  - Gov QA's SU 21-31 and pays contractor
- Intrusive investigation can be **survey unit (32→45) in delivery unit 1**
  - Gov QA's SU 32-45 and pays contractor
- Each of the above phases/SUs can (should?) have an interim/phased DUA
- Above is completed, project's verification/validation plan has separate procedures for both UltraTEM and MPV. Those digs are completed
- All of the above is wrapped up into the DU 1 final DUA
  - Gov QA's DU 1 and pays contractor

**PDT moves on to DU 2**





# PAYMENT MILESTONES



- **DU1** is composed of:
  - SU1-4: APEX data
  - SU5: TEMSENSE Gap Fill
- Potential Payment Milestones
  - Payment Milestone 1: APEX Dynamic Data Deliverable by SU passes MQOs
  - Payment Milestone 2: APEX Dynamic Classification Final Dig List and Interim Dynamic Classification DUA are Accepted for SU1-4
  - Payment Milestone 3: TEMSENSE Dynamic Detection Data Delivered by SU passes MQOs
  - Payment Milestone 4: Final Cued List and Interim TEMSENSE Dynamic Detection DUA is Accepted
  - Payment Milestone 5: Final Dynamic Coverage DUA is accepted for DU1. This combines the previous Interim Dynamic DUAs
  - Payment Milestone 6: Interim Cued Data Deliverable and DUA for SU5
  - Payment Milestone 5: Final Classification DUA is accepted for DU1. This combines the previous Interim Classification DUAs



# COMMON ISSUES



**Odd payment milestone interpretations have been presented to USACE**

- Payment milestones have been proposed without tying them to an MPC/MQO(s)

**Contractor submitting SUs with unjustified data gaps**

- Gaps are associated with areas that need to be recollected as part of that SU

**Only designating a single DU for a giant MRS**

- Some of the data analysis and decision making comes too late

- We need an earlier DU DUA

- Before demobilization and certainly not just in the final report (includes final DUA)

- Larger projects- sometime in the first few weeks/months

- We've learned this lesson a few times now, time to stop making that mistake

- Not enough verification and validation digs

**Not discussing SU/DU structure during the planning meetings**

- Project needs can drive SUs and DUs but have the conversation upfront.

**Verification/Validation digs need to be completed prior to completion of DU and payment for DU**



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# WHY SHOULD REGULATORS CARE ABOUT SU/DUS?



How involved do you want to be?

- What SU/DU data do you want to see?

When do you want to see the DU data?

- Pre-SPP meeting should discuss which documents/data are delivered and how often and when
- Worksheet #6 should document those communication drivers

When do you expect to see the DUAs?

- When might there be a critical discussion or decision?

Are there “special areas” at the site that should be separate DUs?

- A neighborhood in the middle of farmland
- A campground in the middle of a forest





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# QUESTIONS?

