



ARSET

Applied Remote Sensing Training

<http://arset.gsfc.nasa.gov>

 @NASAARSET

Online Trainings

October 27, 2016

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Webinar Series Outline

- **Week 1: Overview, October 13**
 - How to develop a training program mission statement, create and perform end-user needs assessments, advertise the training, training promotion, and create a good presentation
- **Week 2: Onsite Training, October 20**
 - Online versus onsite trainings; how to develop onsite trainings, including training levels (introductory to advanced), training structure, developing case studies and hands-on exercises, timelines, and program evaluation
- **Week 3: Online Training, October 27**
 - **How to develop online trainings, including training levels (introductory to advanced), designing online presentations, developing assignments and exercises, software, and timelines**

Learning Objectives

- Understand the key steps needed to develop an online or onsite training
- Learn how to conduct outreach and promote trainings
- Learn how to develop and deliver effective presentations on remote sensing topics and applications

Seven Steps to a Successful Remote Sensing Training

1. Develop a Training Mission Statement (Week 1)
2. Assess End-User Needs (Week 1)
3. Build a Network (Week 1)
4. Training Promotion (Week 1)
- 5. Develop Training Material (Weeks 1-3)**
- 6. Conduct the Training (Weeks 2-3)**
- 7. Evaluate the Training (Week 2-3)**

Week 3 Outline

- Online Trainings
- Training Structure
- Software
- Timeline & Deliverables
- Summary

A satellite-style map of a coastal region, possibly a bay or estuary, with a semi-transparent grey overlay box. The map shows land in shades of brown and tan, and water in various shades of blue and green. There are several small red markers scattered across the land area. The overlay box is rectangular and covers most of the central and right portions of the image.

Online Trainings

Online vs. Onsite Trainings

Online Trainings

- Online *live* webinar series; also recorded and freely available on-demand
- 60-90 min per weekly webinar, 3-5 weeks
- Course materials:
 - Presentations and demos
 - Exercises or Homework



Onsite Trainings

- Held in a computer laboratory
- 2-7 days in length
- Mixture of lectures and exercises
- Course materials:
 - Presentations
 - Guided Instructions for exercises



Criteria for Choosing Online vs. Onsite Trainings



Available Resources

- Onsite: requires considerable resources for both trainers and trainees
- Online: less resources needed since there are no travel costs and trainings are shorter in duration



Audience Size

- Onsite: best for <50 people
- Online: can reach hundreds to thousands of people



Content

- Onsite: well suited to basic and complex remote sensing topics
- Online: can be basic or advanced; not well suited to certain types of complex analysis or types of remote sensing data

What is an online training?

- Available over the internet live or on demand
- Allows participation regardless of attendee location
- There are many forms of online training:
 - hourly sessions for several weeks
 - multi-day
 - self paced
- Mixture of presentations, live demonstrations, and Q&A

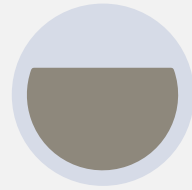
Gradual Learning Process



Fundamentals

Level 0

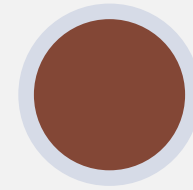
- Webinars
- Assumes no prior remote sensing knowledge
- Examples:
 - *Fundamentals of Remote Sensing*
 - *Satellites, Sensors, Data and Tools for Land Management and Wildfire Applications*



Basic Trainings

Level 1

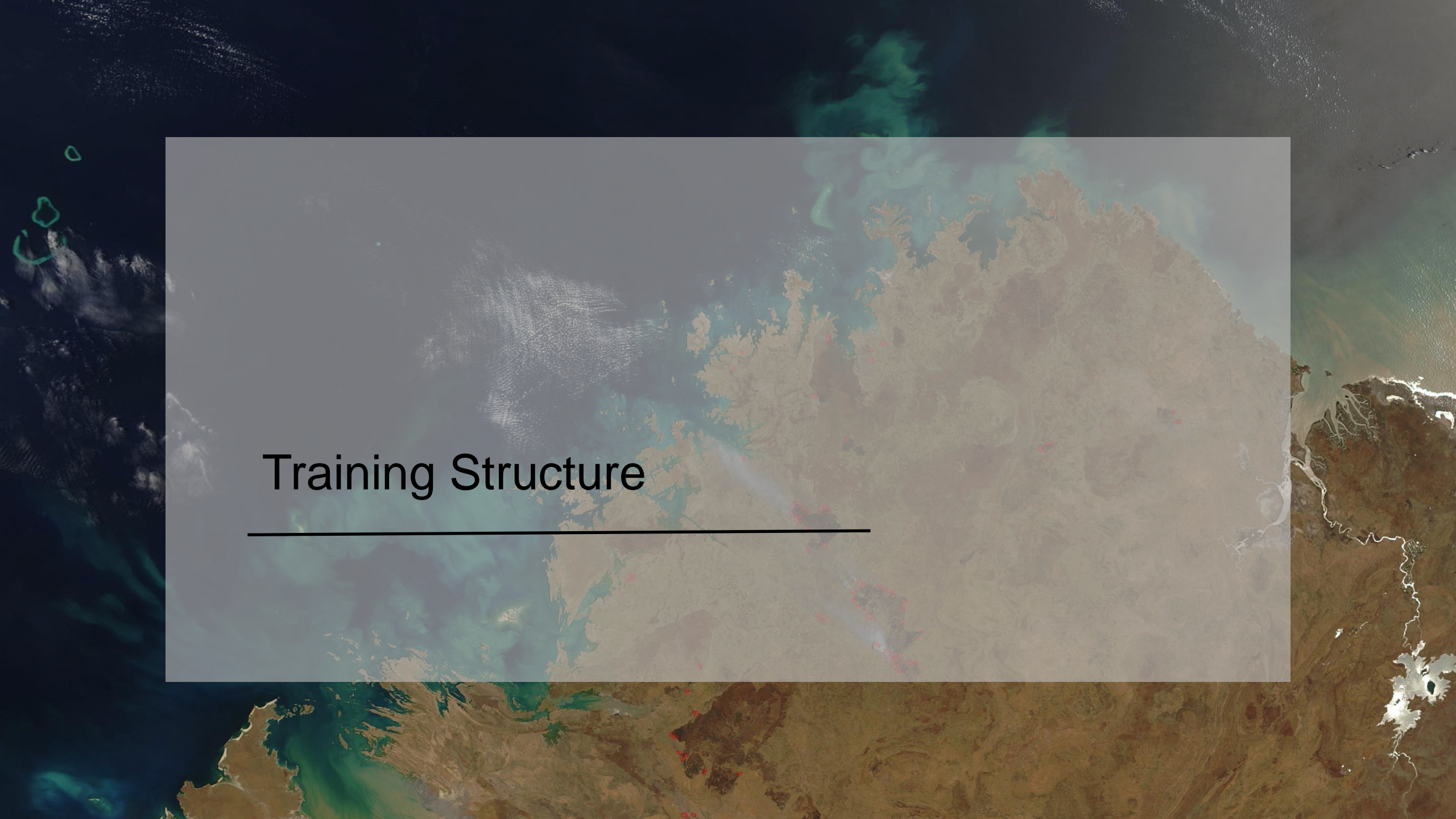
- Webinars & Workshops
- Requires basic knowledge of remote sensing
- More general applications
- Example:
 - *Introduction to Remote Sensing for Conservation Management*



Advanced Trainings

Level 2

- Webinars & Workshops
- Requires basic training
- Focuses on specific applications
- Example:
 - *Advanced Webinar: Creating and Using Normalized Difference Vegetation Index (NDVI) from Satellite Imagery*



Training Structure

Considerations for Online Training

- Invite guest speakers
 - Add training topics beyond your team's expertise
- Work with stakeholders
 - facilitate end-user needs assessments
 - structure the agenda
- To facilitate global participation
 - offer training at multiple time zones
 - provide written transcripts of the training
 - provide training materials in more than one language
- Number of trainers
 - two or more
 - presenting, answering questions, handling technical problems

Types of Online Training



Length

- Hours
- Days
- Weeks



Timing

- Live
- On-Demand



Sharing Content

- Sharing slides with audio presentation
- Self-paced online module
- Broadcast a classroom presentation

Question

- What format of online trainings do you present? (e.g.)
 - Sharing slides with audio presentation
 - Self-paced online module
 - Broadcast a classroom presentation
 - Other

ARSET Agenda Example

- Length of time varies from 3-5 weeks
- 1-1.5 hr. webinars, twice a day
- Week 1: NASA satellite missions, models, and resources relevant to chosen application
- Weeks 2-5: Each week covers different subjects within the general topic being covered

Water Resources

- Week 2: Overview of precipitation and soil moisture data
- Week 3: Overview of runoff, streamflow, and reservoir height data
- Week 4: Overview of evapotranspiration and groundwater data
- Week 5: Regional water budget estimation and water resources data

Advanced NDVI

- Week 2: Deriving NDVI from Landsat
- Week 3: MODIS NDVI Time Series
- Week 4: MODIS NDVI Time Anomalies

Training Components

- Lecture
- Demonstrations
- Homework
- Question and answer session
- Evaluation

Lecture

- Keep your audience in mind
 - speak slowly
 - avoid jargon and acronyms
 - avoid idioms
- Provide interactive components to keep the audience engaged
 - polls
 - quizzes
 - forums



Demonstrations

- Purpose: show steps so that participants know how to navigate the webtool or portal
- Pre-recorded vs. live demonstrations

Level 1: Basic Trainings

- Access the portal or website
- Navigate the portal or website
- Show the functionality of the tool
- Download a data file
 - how to import into GIS

Level 2: Advanced Trainings

- Download and access data
- Apply data to real-life scenarios
 - use case studies
- Analyze remote sensing data
- Separate, offline exercises for practice
- Run code

Homework Assignments

- Balance between adequate testing of knowledge and ease of evaluating assignments to provide feedback
- Multiple choice questions are easiest to grade
 - Limited in their ability to test the depth of understanding on the subject matter
- Most effective assignments mix multiple choice and short answer or essay questions
- Provide an incentive to complete homework
- Collection method

Question & Answer Session

- Opportunity for attendees to ask presenters questions
 - also for trainers to ask participants questions
- Opportunity for participant networking
- Can be dispersed throughout the lecture or at the end
- For trainers
 - reframe questions from participants and repeat them
 - designate a single trainer to answer questions

Additional Opportunities for Trainers

- End-user needs assessment
 - What future topics would like see a training on?
- Solicit feedback on webtools and products
 - Have you used Giovanni before? What for?
 - How user-friendly did you find Giovanni?

Program Evaluation

Goals:

- Assess progress toward meeting learning objectives
- Assess the impact of the training
- Provide an ongoing means of improving the program

Tools:

- Surveys
- Interviews
- Focus groups
- Note: these tools are also used to collect end-user needs (see week 1)

Program Evaluation

- Provide an opportunity at the end of the training for people to take the survey
- Send survey reminders
- Possibly: 6-month survey later can assess impact of training
- Question & answer sessions and polls are also a method for program evaluation
- Results can be used to show impact of your program and to justify continued support

Question

- What about the components we mentioned (listed below) have worked or not worked well for you?
- Components:
 - Lecture
 - Homework
 - Demonstrations
 - Question and answer session
 - Evaluation

An aerial satellite view of a coastal region, likely the Gulf of Mexico, showing a large body of water on the left and a landmass on the right. The land is mostly brown and tan, with some green areas. A semi-transparent grey rectangular box is overlaid on the image, covering most of the central and right portions. The word "Software" is written in black text on the left side of the grey box, with a horizontal line underneath it.

Software

Considerations

- Broadcasts presenter's slides, audio, and video
- Make sure webinar rooms are large enough
- Handles:
 - Registration
 - Reminders
 - Emailing attendees link for access
- Method for live interaction with participants
- Good to have a 'landline' call-in option
- Ability to automatically mute participant audio
- Recording capability

Question

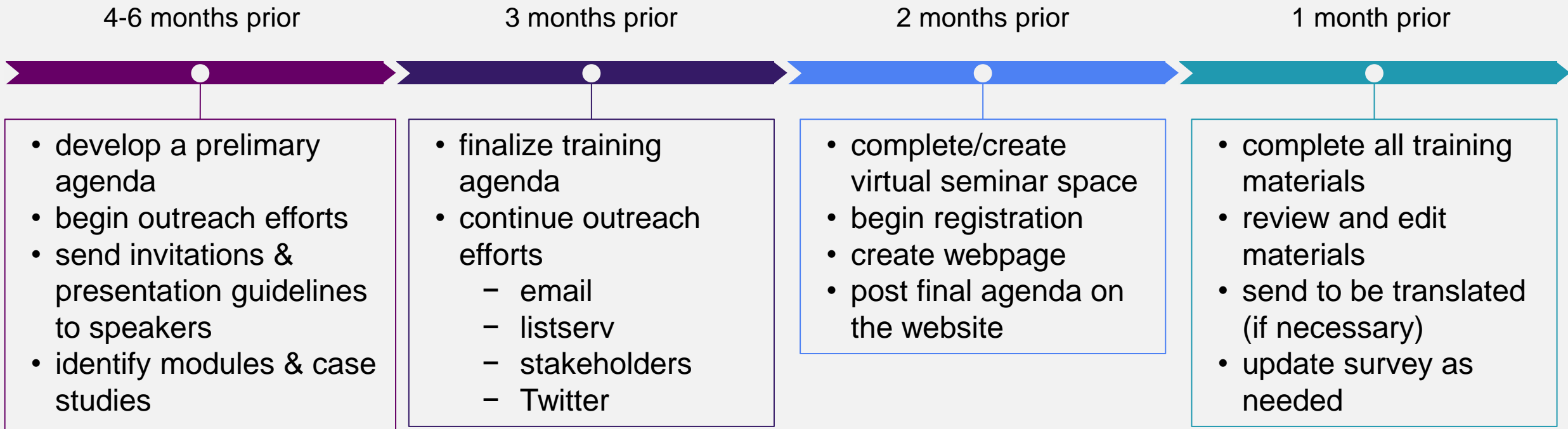
- Poll: does your program do live, on-demand trainings, or both?
- If your program or organization does online trainings, what software do you use?
- What are the advantages & disadvantages?

An aerial satellite image of a coastal region, likely the Gulf of Mexico or Caribbean Sea, showing a large body of water on the left and a landmass on the right. The landmass is mostly brown and tan, with some green areas. A semi-transparent white rectangular box is overlaid on the left side of the image, containing the text "Timeline and Deliverables" in a black, sans-serif font. A thin black horizontal line is positioned below the text within the box. The text is centered horizontally within the box.

Timeline and Deliverables

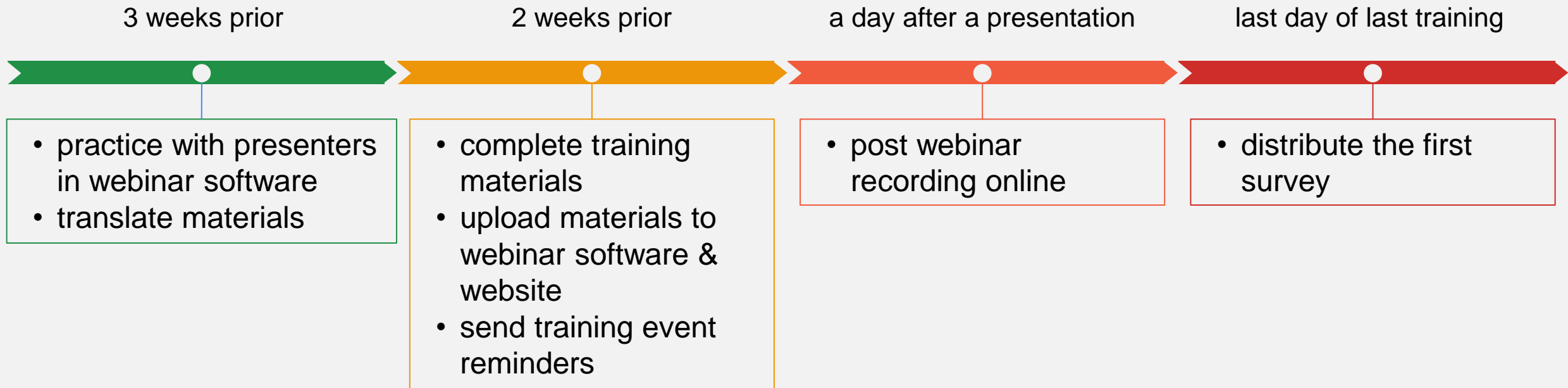
Timelines & Deliverables

Online Training



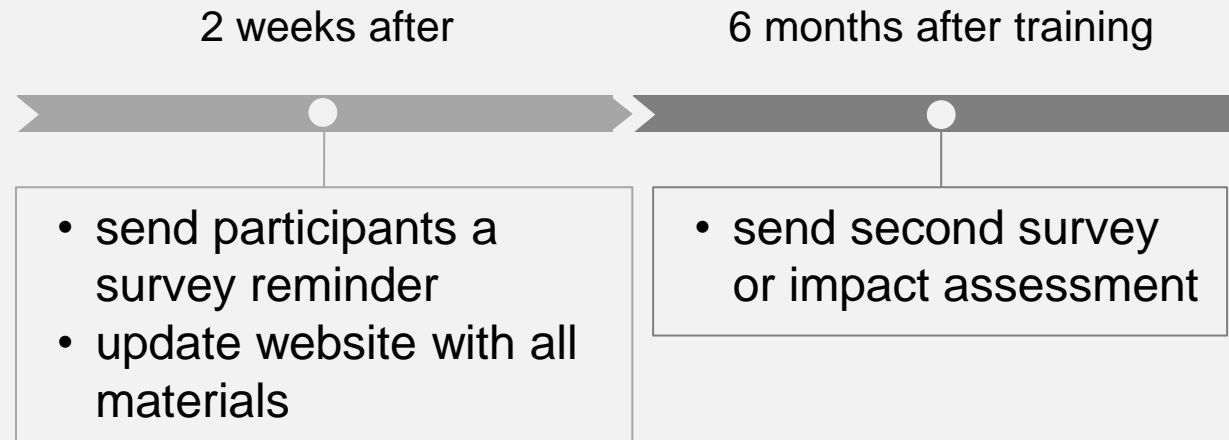
Timelines & Deliverables

Online Training



Timelines & Deliverables

Online Training





Summary

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