3.1 Performance Objectives and Assessment Instruments

Instructional Goal: New engineers in international programs will identify radar scan and signal patterns and identify basic receivers to aid them on a daily basis when independently using intelligence data software to build an emitter identification table in the lab.	**Instructional goal with Performance objective added:** During actual performance of a project new engineers will successfully demonstrate the knowledge necessary to identify radar scan/signal patterns and identify basic receivers when examining intelligence data.
	Terminal Objective with learning context added: During training, new engineers will successfully demonstrate the knowledge necessary to identify scan and signal patterns and identify basic receivers when examining intelligence data.

Main step in instructional goal:	Performance objective for main step:
1.0 Identify radar scan patterns	During project execution, new engineers will identify radar scan patterns from analyzing intelligence data.

Subordinate skills:	Performance objectives for Subordinate skills:	Parallel Test Items:	Directions:
1.1 Identify raster scan	When questioned, "What is a raster scan", a clear verbal definition will be supplied which includes the scan pattern and specific parameters.	a. Explain raster patterns. b. List scan parameters new engineers need to look for to identify raster scan.	Ask students to draw specific scan and label parameters for specific scan. Collect responses and ensure all are congruent. Instructor will take five minutes to review responses with learners.
1.2 Identify sector scan	When questioned, "What is a sector scan", a clear verbal definition will be supplied which includes the scan pattern and specific parameters.	a. Explain sector patterns. b. List scan parameters new engineers need to look for to identify sector scan.	Same as above
1.3 Identify circular scan	When questioned, "What is a circular scan", a clear verbal definition will be supplied which includes the scan pattern and specific parameters.	a. Explain circular patterns. b. List scan parameters new engineers need to look for to identify circular scan.	Same as above
1.4 Identify conical scan	When questioned, "What is a conical scan", a clear verbal definition will be supplied which includes the scan pattern and specific parameters.	a. Explain conical patterns. b. List scan parameters new engineers need to look for to identify conical scan.	Same as above
1.5 Identify LORO scan	When questioned, "What is a LORO scan", a clear verbal definition will be supplied which includes the scan pattern and specific parameters.	a. Explain LORO patterns. b. List scan parameters new engineers need to look for to identify LORO scan.	Same as above
1.6 Identify helical scan	When questioned, "What is a helical scan", a clear verbal definition will be supplied which includes the scan pattern and specific parameters.	a. Explain helical patterns. b. List scan parameters new engineers need to look for to identify helical scan.	Same as above

3.2 Instructional Strategies

Clusters	Instructional Goal Steps	Instructor / Delivery format / Time Required
1	**Main Step 1:** Identify radar scan patterns Objectives: 1.1 1.2 1.3 1.4 1.5 1.6	1 instructor Live lecture with computer or overhead projector, PowerPoint slides and white board 1.5 hours
2 (Note: This section is omitted for this assignment)	**Main Step 2:** Identify radar signal patterns Objectives: 2.1 2.2 2.3 2.4	1 instructor Live lecture with computer or overhead projector, PowerPoint slides and white board 1 hour
3 (Note: This section is omitted for this assignment)	**Main Step 3:** Identify basic receivers Objectives: 3.1 3.2	1 instructor Live lecture with computer or overhead projector, PowerPoint slides and white board 3/4 hour
4	**Terminal objective:** During training, new engineers will successfully demonstrate the knowledge necessary to identify scan and signal patterns and identify basic receivers when examining intelligence data.	

Pre-instructional Activities:

MOTIVATION: Students attention will be gained with an introduction of the material and how learning this material can move them forward in their individual careers to more exciting projects more quickly. This will be followed with an introduction of each participant and what their personal goals are for taking the class.

OBJECTIVES: An agenda and objectives will be presented to the learners at the beginning of the course. Students will be reminded of each sections agenda at the beginning of that section.

STUDENT GROUPINGS AND MEDIA SELECTIONS: The students for this course may consist of a single individual or a small group. If there is only a single learner, the training will be accomplished at the individuals work area on their personal computer. If there is a small group of learners they will be grouped together in a training room. Media will be live lecture and will make use of an overhead projector and PowerPoint slides to show examples for small group or an individual computer with PowerPoint slides for a single learner.

Assessment:

PRETEST: There is no pretest for entry behaviors. Design engineers are required to have the entry behavior skills before being hired for their positions.

PRACTICE TESTS: Verbal quizzes will be used during instruction.

POSTEST: Students will correctly complete a post-test multiple choice questionnaire without the use of aids. A criterion for a passing grade is 80% correct answers.

STUDENT GROUPINGS AND MEDIA SELECTIONS: Students will be grouped individually to do assessment. Verbal quizzes will take place with the entire group/individual and will utilize the overhead projector/computer and the instructor. Multiple-choice quizzes will use pencil and paper and be taken by individual students. The final project, a multiple-choice quiz, will use pencil/paper and be completed by each individual student.

Follow-through Activities:

MEMORY AID: The PowerPoint slides will be used as a memory aid for students.

TRANSFER: Drawing and labeling scans will be used to facilitate transfer of skills.

STUDENT GROUPINGS AND MEDIA SELECTIONS: After training, students will be using these skills on an individual basis. Students will have access to a printed version of the course PowerPoint slides. Students will also have e-mail access to three subject matter experts to assist them with issues.

Content presentation and student participation:

Objective 1.1 Identify raster scan

Content Presentation

CONTENT: Learners will be shown the graphical scan pattern(s) along with a definition and all important scan parameters.
EXAMPLES: Students will be given visual examples of the specific scan in differing forms. Examples include, basic 4 bar raster and a 6 bar interleaved raster scan.
STUDENT GROUPINGS AND MEDIA SELECTIONS: depending on the number of students, they will be in one small group together or the training will be one to one, in an instructor led situation. Media will consist of a PowerPoint presentation to show the examples overhead for small groups or on a computer for individual student. Student(s) will receive a hard copy of the slides after the course is complete. This is to keep the learners focused on the presentation and not the paper in front of them.)

Student Participation

PRACTICE ITEMS AND ACTIVITIES: Ask students questions and involve them in the discussion.
FEEDBACK: Positive feedback will be provided for correct responses.
STUDENT GROUPINGS AND MEDIA SELECTIONS: Students will be in one group or taught on an individual basis and will view a presentation on an overhead projector or single computer. A paper copy of the presentation will be supplied at the end of the class.

Objective 1.2 Identify sector scan

Content Presentation

CONTENT: Learners will be shown the graphical scan pattern(s) along with a definition and all important scan parameters.
EXAMPLES: Students will be given visual examples of the specific scan in differing forms. Examples include unidirectional sector and a bidirectional sector scan.
STUDENT GROUPINGS AND MEDIA SELECTIONS: depending on the number of students, they will be in one small group together or the training will be one to one, in an instructor led situation. Media will consist of a PowerPoint presentation to show the examples overhead for small groups or on a computer for individual student. Student(s) will receive a hard copy of the slides after the course is complete. (To keep the learners focused on the presentation and not the paper in front of them.)

Student Participation

PRACTICE ITEMS AND ACTIVITIES: Ask students questions and involve them in the discussion.
FEEDBACK: Positive feedback will be provided for correct responses.
STUDENT GROUPINGS AND MEDIA SELECTIONS: Students will be in one group or taught on an individual basis and will view a presentation on an overhead projector or single computer. A paper copy of the presentation will be supplied at the end of the class.

Objective 1.3 Identify circular scan

Content Presentation

CONTENT: Learners will be shown the graphical scan pattern(s) along with a definition and all important scan parameters.
EXAMPLES: Students will be given visual examples of the specific scan.
STUDENT GROUPINGS AND MEDIA SELECTIONS: depending on the number of students, they will be in one small group together or the training will be one to one, in an instructor led situation. Media will consist of a PowerPoint presentation to show the examples overhead for small groups or on a computer for individual student. Student(s) will receive a hard copy of the slides after the course is complete. (To keep the learners focused on the presentation and not the paper in front of them.)

Student Participation

PRACTICE ITEMS AND ACTIVITIES: Ask students questions and involve them in the discussion.
FEEDBACK: Positive feedback will be provided for correct responses.
STUDENT GROUPINGS AND MEDIA SELECTIONS: Students will be in one group or taught on an individual basis and will view a presentation on an overhead projector or single computer. A paper copy of the presentation will be supplied at the end of the class.

Objective 1.4 Identify conical scan

Content Presentation

CONTENT: Learners will be shown the graphical scan pattern(s) along with a definition and all important scan parameters.
EXAMPLES: Students will be given visual examples of the specific scan in differing forms. Examples include, basic conical scan used for target tracking and conical scan which has been superimposed onto a raster scan.
STUDENT GROUPINGS AND MEDIA SELECTIONS: depending on the number of students, they will be in one small group together or the training will be one to one, in an instructor led situation. Media will consist of a PowerPoint presentation to show the examples overhead for small groups or on a computer for individual student. Student(s) will receive a hard copy of the slides after the course is complete. (To keep the learners focused on the presentation and not the paper in front of them.)

Student Participation

PRACTICE ITEMS AND ACTIVITIES: Ask students questions and involve them in the discussion.
FEEDBACK: Positive feedback will be provided for correct responses.
STUDENT GROUPINGS AND MEDIA SELECTIONS: Students will be in one group or taught on an individual basis and will view a presentation on an overhead projector or single computer. A paper copy of the presentation will be supplied at the end of the class.

Objective 1.5 Identify LORO scan

Content Presentation

CONTENT: Learners will be shown the graphical scan pattern(s) along with a definition and all important scan parameters.
EXAMPLES: Students will be given visual examples of the specific scan.
STUDENT GROUPINGS AND MEDIA SELECTIONS: depending on the number of students, they will be in one small group together or the training will be one to one, in an instructor led situation. Media will consist of a PowerPoint presentation to show the examples overhead for small groups or on a computer for individual student. Student(s) will receive a hard copy of the slides after the course is complete. (To keep the learners focused on the presentation and not the paper in front of them.)

Student Participation

PRACTICE ITEMS AND ACTIVITIES: Ask students questions and involve them in the discussion.
FEEDBACK: Positive feedback will be provided for correct responses.
STUDENT GROUPINGS AND MEDIA SELECTIONS: Students will be in one group or taught on an individual basis and will view a presentation on an overhead projector or single computer. A paper copy of the presentation will be supplied at the end of the class.

Objective 1.6 Identify helical scan

Content Presentation

CONTENT: Learners will be shown the graphical scan pattern(s) along with a definition and all important scan parameters.
EXAMPLES: Students will be given visual examples of the specific scan.
STUDENT GROUPINGS AND MEDIA SELECTIONS: depending on the number of students, they will be in one small group together or the training will be one to one, in an instructor led situation. Media will consist of a PowerPoint presentation to show the examples overhead for small groups or on a computer for individual student. Student(s) will receive a hard copy of the slides after the course is complete. (To keep the learners focused on the presentation and not the paper in front of them.)

Student Participation

PRACTICE ITEMS AND ACTIVITIES: Ask students questions and involve them in the discussion.
FEEDBACK: Positive feedback will be provided for correct responses.
STUDENT GROUPINGS AND MEDIA SELECTIONS: Students will be in one group or taught on an individual basis and will view a presentation on an overhead projector or single computer. A paper copy of the presentation will be supplied at the end of the class.

3.3 Delivery System and Media Selections

Session	Objectives	Type(s) of learning	Media selections and student groupings	Delivery system(s)
1	1.1 1.2 1.3 1.4 1.5 1.6	Verbal	Instructor led with overhead projection of PowerPoint examples for small group or individual computer presentation for individual learner.	Classroom instruction for small group lecture and discussion or individual office for single learners.

Delivery system for instruction and rational
The delivery system for all instruction will be instructor-led. It was apparent through formal and informal interviews that this delivery method would be the best solution for this instructional material.

Rational for instructional delivery system and media selection
The delivery system and media selection were chosen because of the feedback received from the International Programs group. It was found that through interviews, the material can be somewhat confusing if a particular learner is accustomed to differing terminology. In addition, there are readily available computer training facilities that include an instructor computer, overhead projector, and white boards that will help to facilitate this deliver systems and media selection.