

## Exercise 7: Digitize a Diagram

### Goal

Use a digitizer to capture a new diagram.

### Introduction

We shall now look at how to use a digitizer to capture more complex diagrams. We will assume that the diagram is available on paper and that the contours are printed on a map whose projection is recognized by GIMS.

This exercise is using the diagram in Annex 1 that you should print prior to starting task 1.

### Task 1: Recognize the map

The first thing to do is to create a new diagram.

- In the **Diagram** menu, select **New**, then **Service Area**.
- Change the orbital position to  $-77.5$  degrees.

The second step is to "recognize" the map so that GIMS will subsequently be able to convert the points transmitted by the digitizer into points on the Earth defined by their latitudes and longitudes. To do this, you must:

- select the **Capture | Recognise Projection** menu.
- With the digitizer mouse, click on six points whose coordinates are known to you (see the six numbered points on the map).
  - Use the yellow button or,
  - the left button depending on the mouse you are using.
- Enter the coordinates of these six points in the table displayed by GIMS. Check that an asterisk is present for each line in which you will be entering the coordinates, since this proves that the points selected have been correctly digitized.
- Click on the "Next >>" button.
- GIMS will now select the most probable projection. Click on OK to accept this choice.

You are now ready to digitize the contours of this diagram: two gain contours, one service area and a boresight.

### Task 2: Capture a gain contour data

- Before digitizing any gain contours, ensure that the **Capture | Gain Information** option has been selected.
- You may then digitize the boresight by clicking, with the digitizer mouse, on the boresight
- You digitize the gain contours by following the contour line while holding down the yellow or left digitizer mouse button.

### Task 3: Capture a service area

- Before digitizing a service area, ensure that the **Capture | Service Area Information** option has been selected.
- You may then digitize the service area in the same way as you did for a gain contour.

#### ***Task 4: Filter the digitized contours***

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To make fine adjustments to the digitized contours, use the filtering tool to eliminate the irregularities that result from the manual digitization process. To do this,

- select a contour and choose the **Tools | Filter** menu.
- Choose **Smooth contour** in the list of available filters and press the Enter key  
or double-click on the **Smooth contour** item

The filtered contour will appear in blue over the original contour.

- To accept the filtering and thereby replace the original contour with the filtered contour, select the **Tools | Accept** menu.
- You may now save this diagram in your local (*work*) database.