Project: Moving Map Display

A moving map display is a situational awareness tool used by pilots in both the civil as well as the military aviation world. The display shows a two-dimensional view of different navigation charts as shown in the table below.

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Scale</th>
<th>Range [nmi]</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNC</td>
<td>1:5M</td>
<td>160</td>
<td>Global Navigation Chart</td>
</tr>
<tr>
<td>JNC</td>
<td>1:2M</td>
<td>80</td>
<td>Jet Navigation Chart</td>
</tr>
<tr>
<td>ONC</td>
<td>1:1M</td>
<td>40</td>
<td>Operational Navigation Chart</td>
</tr>
<tr>
<td>TPC</td>
<td>1:500k</td>
<td>20</td>
<td>Tactical Pilotage Chart</td>
</tr>
</tbody>
</table>

Table 1. Types of Charts

nmi : Nautical Miles

M : Million

K : Thousand

Ψ Range information based on the McDonnell Douglas Model #ASQ-196

Goal:

- To write an Ada95 program to read and display image files in the following formats
  - JPEG
  - BMP
  - GIF

- How would you zoom in and out of the image? Your program should allow the user to enlarge/ shrink the image using the ‘+’ and ‘−’ keys on the keyboard.

The standards for the formats can be found at the following links

http://www.jpeg.org/

http://www.dcs.ed.ac.uk/home/mxrf/gfx/2d/BMP.txt

http://www.w3.org/Graphics/GIF/spec-gif89a.txt
Given that your moving map display size is 4.5” x 4.5”: 

Issues to take into consideration are 

- Aircraft speed varies from 0 – 480 knots. 
- Turns are constant at 7 degrees per second. 
- Time taken to switch between the maps. 
- Time taken to enlarge/ shrink the maps. 

Which of the format (GIF/ JPEG/ BMP) would you choose for your moving map display? Justify your answer.