

### 3.0 Mobility Needs Summary

Technology can help provide solutions to many of the mobility problems, whether in the airlift or refueling mission areas. For example, the development of long-range capability could eliminate the refueling problem of transport operations.

The various problems and associate needs have been identified in Section 2.0. These needs, with additional explanatory comments, are summarized in the following:

- Global command, control, communications, computers and intelligence (C<sup>4</sup>I) - use of worldwide C<sup>4</sup>I nets to integrate with the AMC aircraft and command centers to provide secure, reliable, instantaneous command and control.
- Very accurate worldwide navigation - accuracy of one meter or better when needed for all mobility aircraft. Particularly applicable to air drop, special operations and tankers.
- Realtime situational awareness - Air mobility crews need to have current threat information and other intelligence data available in the cockpit to ensure highest probability of mission success.
- Improved aircraft survivability - availability of missiles in third world countries is prevalent today. Air mobility aircraft need protection from these and other threats in order to do their job.
- Better material handling equipment - the use of commercial transportation is limited by the ability to load and unload them at austere bases. Present equipment does a good job, but it must be flown in first in order to be available.
- Improved reliability and maintainability - Better reliability can improve mission completion capability. Improved maintainability would mean fewer maintenance personnel, fewer spares, etc.
- Total asset visibility/In-transit visibility - need to know where each item being transported is at all times (similar to Federal Express).
- Improved delivery systems - low cost precision airdrop could eliminate much ground equipment. Drop weight needs to be increased, precision drop improved and cost reduced.
- Better training systems - virtual reality should permit better training in all areas (maintenance, loading, flying, etc) plus mission planning.
- Global range - better materials, aerodynamics and engines should permit long range operation without refueling.
- Higher speed - Future conflicts may require faster reaction times.

These needs are found to be spread throughout the various mobility missions as summarized in Table 3.0-1.

*Table 3.0-1. Mobility Tasks and Needs*

	<b>Operational Tasks</b>					
	<b>Cargo Airlift</b>	<b>Passenger Airlift</b>	<b>Airdrop</b>	<b>Air Refueling</b>	<b>Med Evac</b>	<b>Special Ops</b>
<b>Global Comm</b>	X	X	X	X	X	X
<b>Global Nav Accuracy</b>	X	X	X	X	X	X
<b>Situation Awareness</b>	X	X	X	X	X	X
<b>Aircraft Survivability</b>	X	X	X			X
<b>Improved R&amp;M</b>	X	X		X		X
<b>Better Material Handling Equipment</b>	X		X		X	X
<b>Total Asset Visibility</b>	X	X	X		X	X
<b>Improved Delivery Systems</b>	X		X	X		X
<b>Better Training System</b>	X	X	X	X	X	X
<b>Global Range</b>	X	X			X	
<b>Higher Speed</b>	X	X		X	X	X

The needs identified draw on many different advanced technologies. These relationships are illustrated in Table 3.0-2.

*Table 3.0-2. Mobility Needs and Technologies*

	<b>Technologies</b>						
	<b>Sensors</b>	<b>Info</b>	<b>Space</b>	<b>Aircraft/ Propulsion</b>	<b>Materials</b>	<b>Biotech</b>	<b>Directed Energy</b>
<b>Global Comm</b>		X	X				
<b>Global Nav Accuracy</b>	X	X	X				
<b>Situation Awareness</b>	X	X	X				
<b>Aircraft Survivability</b>	X	X		X	X	X	X
<b>Improved R&amp;M</b>	X	X		X	X	X	
<b>Better Material Handling Equipment</b>				X	X		
<b>Total Asset Visibility</b>	X	X			X	X	
<b>Improved Delivery Systems</b>				X	X	X	
<b>Better Training System</b>	X	X	X	X	X	X	
<b>Global Range</b>				X	X	X	
<b>Higher Speed</b>				X	X	X	