AASHTO TIG
Lead States Team
Marketing Analysis

for

THE USE OF SELF PROPELLED MODULAR TRANSPORTERS TO REMOVE & INSTALL BRIDGES

September 7, 2007

MARKETING ANALYSIS

What is the need for this technology?

The Federal Highway Administration (FHWA) and AASHTO have identified reducing congestion as a major priority of the nation's highway program. Congestion related to building, maintaining and rehabilitating America's roadway system is an area of particular focus. "Get in, do it right, get out, and stay out" has become a rallying cry for accelerating the adoption by transportation agencies and contractors of innovative technologies that minimize negative impacts on motorists and of practices that improve the safety of the transportation workforce in roadway work zones.

Self-propelled modular transporter (SPMT) technology addresses each of these critical needs by providing a means of moving bridge structures into and out of place on busy roadways in just minutes or hours, while capitalizing on the use of offsite prefabrication of new structures to improve the quality of the finished product and enhance the safety of workers. The use of SPMTs provides ultimate flexibility and speed in replacing or installing bridge structures.

In short, the use of SPMTs can:

- Significantly reduce traffic disruption
- Restore use of existing highways to traffic in significantly less time
- Improve work-zone safety
- Minimize environmental impacts
- Improve constructability
- Lower life cycle costs

SPMT technology accomplishes these high value benefits via several avenues.

Reduced Onsite Construction Time –Using SPMTs to remove and install bridges offers the shortest possible onsite construction time. Disruption to traffic using the bridge, or passing under it, can be decreased from months to minutes or hours. Less onsite construction time means better work-zone safety for construction crews and motorists (more than 85% of those killed in work zone accidents are motorists). Access to local services, including schools and hospitals, is improved with less traffic disruption, and the public's perception of service by the agency and contractor is improved with shorter construction times.

Improved Quality of Construction – Improved quality with longer service life and reduced maintenance can be more easily achieved in prefabricated bridge systems built offsite and quickly moved into position with SPMTs. Bridges are built in the controlled environment of a staging area, meaning the focus is solely on construction resulting in a higher quality product. The structure can be built as a unit and moved as a unit to its destination, requiring fewer deck joints than might be required in other prefabricated systems. Work can begin earlier in the staging area, regardless of onsite construction status, allowing for proper construction of the

system and curing of concrete, which leads to better long-term performance. These factors can lead to improved reliability of the finished product.

Improved Worker and Motorist Safety – Construction crews working in a staging area are free of the dangers of working "in traffic" and have the added benefits of being able to work during the day and near ground level throughout the prefabrication process. Workers are much safer performing their jobs well away from traffic, and fewer and shorter lane closures for onsite operations make workers and motorists safer since any deviation from normal traffic patterns can result in accidents. Motorists are exposed to the distraction and danger of navigating construction work zones for a fraction of the time required for traditional construction methods.

Increased Contractor Options – SPMT technology allows flexibility in staging areas, which can be located well away from the final bridge location depending on accessibility. "Driving" the structure into place eliminates many issues related to overhead height restrictions impacting crane lifting operations, while the supported SPMT loads provide added safety assurance relative to suspended crane loads. Offsite staging allows the contractor to work during the day and extend work hours as needed in an environment that is safer. Since foundation and possibly substructure work can be onsite concurrently with prefabrication activity nearby, unexpected delays such as utility needs do not delay progress in the offsite construction area. SPMTs can also be effective in removing old structures, with many of the attendant benefits including safety and time savings. Finally, "mom and pop" construction companies can use this technology as readily as larger companies because SPMT vendors provide engineering services that assist contractors with issues related to the use of the technology.

Project and User Cost Savings – Despite significant mobilization costs, substantial offset savings can be gained through the use of SPMTs. Fewer maintenance-of-traffic setups, shorter hours for law enforcement officers due to fewer rolling roadblocks, time savings from fewer shift changes for construction crews, the elimination of temporary-detour construction and repair of long-term detours on existing roads, the use of smaller owner and contractor crews, reduced onsite time required for owner agency engineering and inspection requirements due to accelerated construction, a vast reduction in the myriad user costs associated with construction-related delay, detour, and congestion, and less maintenance and repair costs associated with better long-term performance of the prefabricated structure are among cost savings factors. Contractors realize particular savings including lower insurance premiums, increased volume of projects due to the speed of construction and installation, reduced manpower and equipment costs and reduced equipment rental time, among others.

Who are the broad target audiences for the LST? Indicate the organizations that may benefit considerably from use of this technology.

Agency	Primary Target	Secondary Target
State Agencies	X	
Local Agencies/MPO's/Toll Authorities	X	
Contractors	X	
Consultants (ACEC and state/local)	X	
General Public		X

Who are the decision makers in the primarily targeted agencies?

Agency	Decision-making Office
State Agencies	Secretary
	Chief Engineer
	State Bridge/Construction Engineer
	State Project Manager
	District Engineer/Chief (proj. owners)
	Design/Planning/Constr./Bridge Staff
Local Agencies	State DOT Dist. Engineers
	Local Agency Chief Engineer
MPO's	Executive Director
Toll Authorities	Executive Director
Contractors, General and Bridge	Owner/CEO
Consultants, National/Local and Bridge	Project Engineers and Designers

What information will decision makers want to know to reach a conclusion about trying or adopting this technology?

Information	Interest Level	
	Critical	Desirable
State Agencies		
Secretary/Executive Directors/Chief Engineers		
1. Minimize disruption	X	
2. Faster delivery (econ. benefit to State)	X	
3. Scope of successful SPMT use	X	
4. Cost factors/user costs	X	
5. Public opinion re: minimum disruption		X
State Bridge/Construction Engineers/Project Managers		
All of the above, plus		
6. Constructability	X	
7. Technical Detail	X	
8. Contract/Bid Strategies	X	
9. Simplicity of application	X	
District Engineers		
All of the above, plus		
10. Best applications guidance	X	
Contractors		
All of the above, plus		
Cost factors (+ quick estimates available from vendors; useful in bid process	X	
Future use/trend		X
Resources available through TIG/LST	X	
Simplicity of operation/application	X	
Consultants		
All of the above		
General Public		
Less disruption	X	
Economic benefits (motorists/business)	X	
Decision drivers (Why SPMT?)		X

What are actual and perceived barriers to be overcome to do a trial or to adopt this technology as a standard?

Barrier	Type	
	Actual	Perceived
Mobilization cost		X
Availability of equipment	X	
Effective bid specification language	X	
Effective contract language	X	
Agency stovepiping between divisons/programs/functions	X	
Agency staff orientation, training, and preparation	X	
New technology comes to owner agencies late, without adequate detail	X	
Bridge engineers require detailed specification, regardless of relative simplicity of SPMT operations. Engineering detail must remain a priority throughout the planning/design/construction process, with SPMT plan addressing all these details.		X
Owner agencies getting involved with means and methods		X
Contractors moving away from means and methods specification toward performance contracting		X
Contractors resist sharing profit with vendor, reducing profit by hiring vendor	X	
Contractor issues re: the way prefabricationis planned, from staging to cash flow		X
Materials issues related to definition of prefabrication and cast-in-place; process issues governing these two procedures		X
Room required to stage in a congested environment	X	
Size of project (i.e., too small)		X
Contractors are outfitted with traditional crews & equipment that will do the job (cranes, etc.)	X	
SPMT is a proprietary product		X
SPMT is more “technical” than traditional equipment; but this presents fewer barriers than might be perceived.	X	
Risk is greater with SPMT		X

What marketing opportunities already exist?

Opportunity	Dates
NSBA World Steel Bridge Symposium, New Orleans, LA	December 4-7, 2007
Transportation Research Board (TRB) Annual Meeting, Washington, DC	January 13-17, 2008
FHWA Accelerated Bridge Construction Conference/Highways for LIFE, Baltimore, MD	March 20-21, 2008
NCBC Concrete Bridge Conference, St. Louis, MO	May 4-8, 2008
AASHTO Highway Subcommittee on Bridges & Structures Annual Meeting, Omaha, NE	May 18-22, 2008
International Bridge Conference, Pittsburgh, PA	June 2-4, 2008
6th National Seismic Conference on Bridges & Highways, Charleston, SC	July 27-30, 2008
PCI National Bridge Conference	October 5-8, 2008

Who are our potential partners in marketing this technology?

Potential Partner	Possible Supporting Activities
AGC/ARTBA	Liaison/Intel re: industry realities/Outreach to members
FHWA HQ and Divisions	Technical expertise and stakeholder outreach
DOTs:	
NY	Case histories and stakeholder outreach
GA	Case histories and stakeholder outreach
CA	Case histories and stakeholder outreach
OH	Case histories and stakeholder outreach
Contractors/Consultants	
HDR	Case histories and industry stakeholder outreach
HNTB	Case histories and industry stakeholder outreach
Baker	Case histories and industry stakeholder outreach
URS	Case histories and industry stakeholder

	outreach
PB	Case Histories and peer stakeholder outreach
Other Associations	
ACEC	Liaison/Intel re: industry realities/Outreach to members
National Steel Bridge Alliance (NSBA)	Liaison/Intel re: industry realities/Outreach to members

AASHTO TIG
Lead States Team
Marketing Plan

for

THE USE OF
SELF PROPELLED MODULAR TRANSPORTERS
TO REMOVE & INSTALL BRIDGES

Lead States Team:

Tom Andres , Chair, Florida DOT
David Fish , Rhode Island DOT
Jugesh Kapur , Washington DOT
Hossein Ghara , Louisiana DOTD
Jim McMinimee , UTAH DOT
Keith Waugh , Leware Construction Company
Bill Halsband , Mammoet
Mary Lou Ralls , Bridge Consultant
Monica Worth , Marketing Consultant

September 7, 2007

WORK PLAN *(Identify each proposed activity as a task. Include planned promotional tools and information distribution methods. Task descriptions must clearly state the goal and scope of each activity and be in adequate detail to substantiate the associated cost estimate in the budget. Identify the lead states team member who is coordinating each task. Refer to chapter 3 of guidelines for additional information concerning task descriptions. Add or delete task numbers as necessary.)*

Task #	Description	Date	Lead
Task 1.	**Assist State agencies in achieving 2 or more SPMT projects continually in the pipeline**		
1.1 Contact States that did not respond to initial survey for their input. Contact States that responded as needed for clarification. 1.2 Develop marketing materials for all target audiences (brochure, PPT, website content, etc. 1.3 Identify pool of target State agencies (by existing use, existing relationships/knowledge of LST and allies, geography, size of bridge program). Candidates: OH, NY, RI, PA, WA, FL, GA, LA, UT, CA, OR, IL 1.4 Convene two LST Working Groups to address two barriers to adoption: Bid/Contract Issues and Best Applications 1.5 Reach target agencies with opportunity to receive personalized tech assistance in strengthening State's SPMT program (personal outreach by LST peers and presentations at relevant events): *a. NSBA World Steel Bridge Symposium* *b. TRB* *c. FHWA Accelerated Bridge Construction Conference/HFL* *d. NCBC Concrete Bridge Conference* *e. AASHTO SCOBS* *f. International Bridge Conference* *g. 6th Nat'l Seismic Conference on Bridges and Highways* *h. PCI National Bridge Conference* 1.6 Secure commitment to work with TIG LST toward goal of 2 or more SPMT projects in pipeline continually			

1.7 Assign LST members to work with each State prospect for Task 1, design implementation plans, and launch these partnerships 1.8 Cultivate two incoming AASHTO Presidents for support of TIG SPMT effort, as part of accelerated construction priorities.			
Task 2.	**Solicit State agencies to tap FHWA Innovative Bridge Research & Deployment (IBRD) funds to compel a first use of SPMT technology**		
2.1 Identify pool of potential adopters who can be moved to apply for IBRD funds. Candidates: NJ, IN, VA, MD, CT, MA, DC, TX, MI, CO, MO, NH [has shown interest] (urban populous States) 2.2 Reach target agencies to educate and assist with IBRD process (personal outreach and presentations at relevant events) 2.3. Assign LST members to work with potential adopters and implement technical assistance.			
Task 3.	**Solicit local agencies/MPO's/Toll facilities to tap LTAP/TTAP/IBRD/HfL programs to compel a first use of SPMT technology**		
3.1 Identify pool of potential local/metropolitan/toll facility adopters who can be moved to interaction with LTAP/TTAP/IBRD/HfL toward a first use of SPMT technology. Candidates: Agencies/organizations in States now using SPMT 3.2 Reach target agencies/organizations to educate and assist with outreach to stated resources (personal outreach and presentations at relevant events). 3.3 Assign LST members to work with potential adopters and implement technical assistance.			
Task 4.	**Disseminate information and guidance to Contractors to overcome barriers to SPMT adoption**		
4.1 Work with LST contractor representatives, LST FHWA representative, AGC and ARTBA to discuss opportunities and barriers to SPMT use by contractors and identify opportunities for information outreach. 4.2 Create necessary materials and editorial content for outreach. 4.3 Identify opportunities for education and outreach through these groups. Provide editorial content to their publications as needed. 4.4 Identify strategic individual contractors for personal outreach.			

4.5 Provide information about SPMT's to these individual contractors (material and presentations at relevant events).			
Task 5.	**Increase general public awareness of SPMT technology in use by State/local agencies and organizations.**		
5.1 Identify model SPMT programs/uses, past and in progress. 5.2 Prepare for outreach to media (create relevant materials and contact lists) in markets strategic for influence by TIG SPMT LST 5.3 Reach target SPMT users and provide assistance to their agency/organization public information staff in planning events that capitalize on the extraordinarily visual nature of SPMT operations (including public/legislature/local official attendance at installation events) 5.4 Provide public information staff with tools (media material and templates) to strengthen media outreach and convey consistent messages nationwide.			
Task 6.	**Disseminate information and guidance about SPMT technology to consultants.**		
6.1 Reach out to ACEC to discuss opportunities and barriers to SPMT adoption by consultants. 6.2 Identify opportunities for education and outreach through ACEC. Provide editorial content targeting the trends, use and benefits of SPMT technology by transportation agencies to the organization's publications. 6.3 Work with local and State agencies targeted for adoption or increased SPMT use to identify their key consultants and provide agency with material and assistance to raise awareness and education of SPMT technology among them.			
Task 7.	**Prepare and Submit Closeout Report**		

COMMUNICATIONS PLAN

(*A comprehensive listing of transportation agencies, manufacturers, suppliers, and other affected organizations that the team currently plans to communicate with during the marketing effort, including the purpose of the communications Include the office to be contacted when known.)*

Communication Targets	Method(s)	Purpose
State Agency Secretary/Executive Director	Letter, Brochure	Awareness; education; build commitment to spec SPMT and participate in TIG LST technology assistance program
Agency Chief Engineer	Letter, Email, Brochure, Demo/Workshop/Showcase	Awareness; education, build commitment to spec SPMT and participate in TIG LST technology assistance program; provide resources to colleagues at all relevant levels of agency; provide ongoing technical resources to prepare agency to spec successfully.
State Bridge/Construction Engineer/s	PPT Presentation, Email, Brochure, Demo/Workshop/Showcase, Web Content	Awareness, education, build buy-in to spec SPMT and participate in TIG LST technology assistance program; provide ongoing technical resources and training to prepare agency to spec successfully.
State Project Manager/s	PPT Presentation, Email, Brochure, Demo/Workshop/Showcase, Web Content	Awareness, education, build buy-in to spec SPMT and participate in TIG LST technology assistance program; provide ongoing technical resources and training to prepare agency to spec successfully.
Agency District Engineer/Chief (project owners) – State and Local	PPT Presentation, Email, Brochure, Demo/Workshop/Showcase, Web Content	Awareness, education, build buy-in to spec SPMT and participate in TIG LST technology assistance program; provide ongoing technical resources and training to prepare agency to spec successfully.
Agency Design/Planning/Constr./Bridge Staff	PPT Presentation, Email, Brochure, Demo/Workshop/Showcase, Web Content	Awareness, education, build buy-in to spec SPMT and participate in TIG LST technology assistance program; provide ongoing technical resources and training to prepare agency to spec successfully.
MPO Executive Director	PPT Presentation, Email, Brochure, Product Demo,	Awareness; education; build commitment to spec SPMT and

	Web Content	participate in TIG LST technology assistance program
Toll Authority Executive Director	PPT Presentation, Email, Brochure, Demo/Workshop/Showcase, Web Content	Awareness; education; build commitment to spec SPMT and participate in TIG LST technology assistance program
Contractor Owner/CEO	PPT Presentation, Email, Brochure, Demo/Workshop/Showcase, Editorial Content, Web Content	Awareness; education; build commitment to use and spec SPMT
Consultant Project Engineers and Designers	PPT Presentation, Email, Brochure, Demo/Workshop/Showcase, Editorial Content, Web Content	Awareness; education; build commitment to incorporate and spec SPMT in appropriate projects

PERFORMANCE MEASUREMENT PLAN

(List the methods that your lead states team has determined appropriate for measuring performance output and outcome. The first three performance measures are standard for all lead states teams of the AASHTO TIG. See chapters 3, 5, and 6 of the guidebook for additional information about performance measures.)

Performance Measure	Measurement Method
Number of agencies that have adopted the technology as a requirement, option, or alternate as of the date of the closeout report, relative to the number since initiation of the lead states team.	Initial and final surveys of all AASHTO agencies.
Number of agencies that are planning to adopt the technology as a requirement, option, or alternate as of the date of the closeout report, relative to the number since initiation of the lead states team.	Initial and final surveys of all AASHTO agencies.
Number of agencies that have tried the technology for the first time as of the date of the closeout report, relative to the number since initiation of the lead states team.	Initial and final surveys of all AASHTO agencies.
Number of SPMT "programs" per State agency:	10 States achieve 2 or more SPMT projects continually in the pipeline
Number of State agencies tapping FHWA IBRD program to compel a first use of SPMT technology	5 States applying to IBRD for funds to compel a first use of SPMT
Number of Local agencies/MPO's/toll facilities compelling a first use of SPMT technology (through LTAP/TTAP/IBRD/HfL)	5 local agencies/organizations applying to relevant assistance programs to compel a first use of SPMT
Level of general public awareness of SPMT technology in use by State/Local agencies/organizations.	X press events/incidents of coverage in agencies/organizations working with LST to increase or compel first use of SPMT
Disseminate information and guidance about SPMT use and trends to contractors to overcome barriers to adoption.	X?
Disseminate information and guidance about SPMT use and trends to consultants to familiarize them with related agency needs and opportunities.	X?

Annual Lead States Team Budget

Focus Technology: Self Propelled Modular Transporters

Cost Type/Description	Cost	Location (FY08)	Locations (FY09)	Locations (FY10)	# of team members	Estimated Non-reimbursed Costs to Lead States**	Proposed Budget FY08 Labor Costs to be Reimbursed by AASHTO	FY08 Direct Costs to be Reimbursed by AASHTO	FY09 Labor Costs to be Reimbursed by AASHTO	FY09 Direct Costs to be Reimbursed by AASHTO	FY10 Labor Costs to be Reimbursed by AASHTO	FY10 Direct Costs to be Reimbursed by AASHTO	Subtotals of Costs to AASHTO
Promotional Material													
Brochure							$ 1,000.00	$ 2,000.00					$ 3,000.00
Website													$ -
PPT							$ 2,000.00						$ 2,000.00
E-Mail Blast (1)									$ 150.00	$ 500.00			$ 650.00
Trade Journal Articles (1)							$ 3,000.00						$ 3,000.00
Surveys (2)													$ -
Total Promotional Material							**$ 6,000.00**	**$ 2,000.00**	**$ 150.00**	**$ 500.00**	**$ -**	**$ -**	**$ 8,650.00**
Operating and Other Expenses													$ -
Travel for Task 1: a) 4 trips for presentations at key meetings/conferences x 1 LST member	1200	1	2	1	1			$ 1,200.00		$ 2,400.00		$ 1,200.00	$ 4,800.00
b) 10 trips to target States x 2 LST members during project period; 1 LST member toTRB meeting for presentation; plus State agency paid travel for additional representative	1200	3	3	4	2			$ 7,200.00		$ 7,200.00		$ 9,600.00	
c) 1 LST member to TRB meeting for presentation; plus State agency paid travel for additional representative	1200	1			1			$ 1,200.00		$ -		$ -	
Travel for Task 2: 5 trips x 1 LST members for technical assistance to States	1200	3	2		1			$ 3,600.00		$ 2,400.00		$ -	$ 6,000.00
Travel for Task 3: 5 trips x 1 LST members for technical assistance to Local agencies/MPO's/toll facilities	1200	3	2		1			$ 3,600.00		$ 2,400.00		$ -	$ 6,000.00
Travel for interim LST team meeting x 5 LST members	1200		1		5					$ 6,000.00			$ 6,000.00
Expenses for interim LST team meeting (meeting room rental, food, etc.)										$ 2,000.00			$ 2,000.00
Expenses for initial LST team meeting								$ 10,000.00					$ 10,000.00
Expense for marketing plan development							$ 4,500.00						$ 4,500.00
Expense for ongoing marketing support & counsel							$ 3,000.00		$ 3,000.00		$ 3,000.00		$ 9,000.00
LST Conference Calls/E-Communications													
Total Operating/Other Expenses							**$ 7,500.00**	**$ 26,800.00**	**$ 3,000.00**	**$ 22,400.00**	**$ 3,000.00**	**$ 10,800.00**	**$ 73,500.00**
Expendable Goods & Supplies													$ -
Long Distance Telephone Charges								$ 250.00		$ 250.00		$ 250.00	$ 750.00
Reproduction								$ 250.00		$ 250.00		$ 250.00	$ 750.00
Shipping								$ 250.00		$ 250.00		$ 250.00	$ 750.00
Equipment Rental								$ 250.00		$ 250.00		$ 250.00	$ 750.00
Total Expendable Goods & Supplies							**$ -**	**$ 1,000.00**	**$ -**	**$ 1,000.00**	**$ -**	**$ 1,000.00**	**$ 3,000.00**
Equipment Purchase													
Total Equipment Purchase							**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	
Subcontracts*													
Bridge/Structures Consultant (Ralls)							$ 2,500.00		$ 2,500.00		2500		
Total Subcontractors													
Total Lead States Contribution						**$ -**							
Total AASHTO Request							**$ 13,500.00**	**$ 29,800.00**	**$ 3,150.00**	**$ 23,900.00**	**$ 3,000.00**	**$ 11,800.00**	**$ 85,150.00**
							FY 08 Total	$ 43,300.00	**FY 09 Total**	$ 27,050.00	**FY 10 Total**	$ 14,800.00	

*Subcontracts should be established directly with AASHTO. Contact the AASHTO TIG Program Manager for assistance.

**Estimated labor and travel costs for 3-year performance period.

Notes:

1. The proposed AASHTO reimbursed budget is not to include salary and fringe benefits for lead states team members providing services.
2. Travel expenses for lead states team members reprenting industry are not reimbursable by AASHTO.
3. Appropriate indirect charges may be included in the individual cost estimates above.

Activity Schedule for 3-Year Team Duration

Focus Technology: Self Propelled Modular Transporters

O = Original Schedule
R = Work completed
X = Revised Schedule **Revision Date: 9/7/07**

Activity	Lead Person	FY 2008												FY 2009												FY 2010											
		J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Task 1																																					
1.1				O																																	
1.2				O	O	O																															
1.3	HG/TA				O																																
1.4					O	O	O	O	O	O																											
1.5					O	O	O	O	O	O	O	O	O	O	O	O																					
1.5.a							O																														
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1.5.c										O																											
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1.5.g														O																							
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Task 2																																					
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2.2								O	O	O	O	O	O	O	O	O																					
2.3								O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	
Task 3																																					
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3.3													O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	

Activity	Lead Person	FY 2008												FY 2009												FY 2010											
		J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Task 4																																					
4.1					O	O																															
4.2						O	O																														
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Task 7																																				O	O