

## FAQs on the THUMS Website

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Toyota Motor Corporation

No.	Questions	Answers
(1)	Can I register as a personal user?	Please register as a legal entity with the consent of your organization.
(2)	Do I need to follow the registration process when I download another model later?	Please follow the registration process again to reach the download page. Thanks for your patience.
(3)	I cannot receive a "Verification Code" to access the download page. What should I do?	Please check if your settings allow to receive an email from us. The verification code will be sent from thums-noreply@mail.toyota.co.jp.
(4)	What kind of business is permitted under Article 4.7 of the TUP?	As long as THUMS is not priced, it is OK to provide support services for a fee. Please note that THUMS must be free when you share original THUMS or modified THUMS with other users.
(5)	Is it possible to publish the results of a THUMS or modified THUMS simulation in an academic paper or journal?	There is no problem to publish your work as long as you mention that you used THUMS or a modified THUMS.
(6)	What is the procedure required to share Modified THUMS with other users?	Please fill out the required information in the Excel file that can be downloaded from the bottom of the website (Requirements for Sharing Models with Other Registered Users) and send it to us. Please note that sharing is limited to registered users of THUMS.
(7)	In what software can I use THUMS?	ANSYS LS-DYNA. We developed THUMS and validated it using LS-DYNA Version 971 MPP R11.2.2.
(8)	Can Toyota provide a software package to simulate injuries in vehicle crashes?	Users need to acquire the license of LS-DYNA by themselves. Users also need to prepare finite element models representing vehicle body parts or impact test setups. Users can download "Validation Set" from the website for free.
(9)	Please provide data such as trees, joints, etc. for THUMS positioning.	We do not provide any data for positioning.
(10)	What is the unit system for THUMS?	The numbers in THUMS are defined assuming the unit system of mm-ton-sec.
(11)	Why are the head sizes of AM50 and AM95 in THUMS V4.02 the same?	The head size in V4.02 is based on data from the literature (Schneider et al., 1983). In V6.1 and later models, the data of the basis has been updated and the head size has been changed (Gordon et al, 2014).
(12)	A calculation using THUMS is terminated with an error of unknown cause. Please let me know the possible causes.	We have confirmed that the "Validation Set" load conditions and typical vehicle crash conditions can be successfully performed in our calculation environment. Please consult your LS-DYNA sales representative for the optimal settings of LS-DYNA parameters in your calculation environment. Please note that THUMS has been tested only in a MPP (Massively Parallel Processor) environment and may not work properly in an SMP (Symmetric Multiprocessing) environment.
(13)	A THUMS calculation with "braced" as the muscle control setting is terminating with an error. Please let me know the possible causes.	If the muscle control setting is set to braced, you must add contact definitions such as hand-to-steering, foot-to-pedal. The provided data does not include the contact definitions referred to in the muscle activation control. If you do not define the contacts, the calculation will terminate in error because the contact IDs cannot be referenced. (Contact IDs: Steering R=1, Steering L=2, Pedal R=6100200, Pedal L=6105300 )
(14)	Errors caused by slip rings occur after positioning THUMS. How should I deal with this?	There is a possibility that the seatbelt elements before and after the slip ring have changed due to the positioning, or that the Node position of the slip ring and the Node position of the seatbelt element have shifted. It is necessary to revise the defined IDs or Node coordinates of the seatbelt elements set in the slip ring definition.
(15)	Soft tissue near the scapula is deformed during the calculation of the V7 model in the reclining posture.	Please make sure to run your simulation in the MPP environment.
(16)	Is it possible to provide THUMS that are not listed on the web page, such as older version models or bicycle rider models?	All available models are on the website.
(17)	Is it possible to provide vehicle models and detailed information in the paper?	We do not provide vehicle models or detailed information other than described in the paper.
(18)	Is it possible to provide VPS, Abaqus, and Radioss versions of THUMS?	TOYOTA provide only LS-DYNA version of THUMS. Please contact the developer of each code to obtain models converted for other finite element codes.
(19)	Does Toyota provide analysis support services (materials and lectures) for THUMS?	We do not provide CAE analysis support services as part of our regular business.

\*Note: If there are any conflicts between the FAQs and the THUMS User Policy (TUP), the TUP shall prevail.