

# Intel exploring ways to help Stephen Hawking speak

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In this June 19, 2006 file photo Astrophysicist Stephen Hawking speaks at an international gathering of scientists on the origins of the universe at Beijing's Great Hall of the People in China. British scientist Stephen Hawking has decoded some of the most puzzling mysteries of the universe but he has left one mystery for others to explain: How he managed to survive so long with such a crippling disease. The physicist and cosmologist was diagnosed with Lou Gehrig's disease, or motor neuron disease, when he was a 21-year-old student at Cambridge University. Most people die within a few years of the disease being identified. On Sunday, Hawking will turn 70.(AP Photo/Elizabeth Dalziel-File)

Intel Corp. is looking for ways to help famed British physicist Stephen Hawking reverse the slowing of his speech, according to a senior executive with the American chipmaker.

Hawking was 21 when he was diagnosed Lou Gehrig's disease, an incurable [degenerative disorder](#) that has left him almost completely

paralyzed. While an [infrared sensor](#) attached to his glasses translates the pulses in his right cheek into words spoken by a [voice synthesizer](#), the nerves in his face have deteriorated and those close to him say his rate of [speech](#) has slowed to about a word a minute.

Speaking late Sunday on the sidelines of a conference celebrating Hawking's 70th birthday in the English city of Cambridge, Intel [Chief Technology Officer](#) Justin Rattner said his company had a team in England to explore ways to help the celebrity scientist communicate more quickly.

"This is a research project," Rattner told The Associated Press, saying the team's task was to gather data for further study.

Hawking has gained world renown as an expert on cosmology and the author of a best-selling series of books popularizing the field of theoretical astrophysics. His achievements have been all the more remarkable because of his condition. Most of those with Lou Gehrig's disease die within two to five years of their diagnosis, but Hawking has spent nearly half a century carrying out pioneering research work.

Finding ways to keep Hawking communicating has long been a challenge. Lou Gehrig's disease, also known as amyotrophic lateral sclerosis, attacks the cells that control muscles - leading to weakness, slurred speech and paralysis.

Hawking managed to overcome his deteriorating speech for a while by dictating scientific papers to a secretary, or speaking through an interpreter. He lost his voice entirely after a [tracheotomy](#) in 1985, and a computer was built to synthesize his speech in a distinctive, robotic monotone that has since become almost as famous as the scientist himself.

At first, Hawking retained some limited hand movement and could manage about 15 words a minute. Now that even the nerves in Hawking's cheek are beginning to fade, Rattner argued it was time for a new approach - saying that solutions based on brainwaves or eye tracking were among the technologies being considered.

But Rattner said his best bet was on high definition cameras that pick up on the minute movements in Hawking's face to synthesize his speech.

"My wager is some form of facial feature recognition will unlock it for Stephen," he said.

Rattner did not give any specific timeframe for the company's work, and Intel didn't immediately respond to a request for further information.

The Santa Clara, California-based company has long provided Hawking with many of his technological needs - including an upgrade of his speech software and the connection that links his wheelchair-mounted computer to the Internet.

**More information:** Stephen Hawking's website:  
<http://www.hawking.org.uk/>

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