

Queen's professor says SDI software will be unfeasible

By JEFF SHINDER

America's controversial Strategic Defence Initiative (SDI) will be operationally unfeasible, according to David L. Parnas, a Queen's University computer science professor.

The SDI, unveiled by President Ronald Reagan three years ago, is a defensive strategy based on space-age weaponry designed to intercept and destroy attacking missiles. The plan has aroused a great deal of worldwide controversy due to questions of its technical feasibility as well as its possible destabilizing effects on the arms race.

Parnas, a respected authority in computer related matters, told a capacity crowd at York's Senate Chamber last Friday that he feels that there is no way to verify the reliability of the computer software necessary for the implementation of the SDI system. His assessment is based on the regular miscalculations in the use of ordinary software systems.

Despite thorough testing, Parnas added, no software system can be proven reliable until actually put

into practice. SDI, however, must be thoroughly reliable before it is to be used in a real crisis. Unfortunately, Parnas said the SDI system does not possess the ordinary margin of error afforded by all other software systems. The professor is not optimistic that extensive testing will overcome the technical difficulties of potential software error.

Parnas also stressed the immense nature of the proposed missile defence system. In his opinion, the number of potential software deficiencies rises in proportion with the size of the required system.

Parnas estimated that an operational Star Wars missile defence system would need an enormous space-based computerized structure. The system would have to discriminate between decoys and real warheads in order to eliminate only the dangerous missiles. The software system would also require the capability to estimate the "kill factor" of the system. That is, the system's energy beams may not be sufficient to properly penetrate and destroy the incoming missiles, making it imperative that the computer accurately

discover if the missiles have actually been destroyed.

According to Parnas, in a hypothetical battle situation, the SDI computer system would be operating under enormous strain. All the components of SDI in space would be computerized to dissect and process raw data compiled by sensors and then transmit the information to the system's remaining satellites. Due to the intricate linkage of the entire system even a minor error in one of the system's software components would effectively disrupt the performance of SDI as a whole. "The inadequacy of computer software destroys the competence of the entire system," Parnas noted.

Parnas conceded that his view is highly controversial, as he has drawn severe criticism from pro-SDI elements in the American defence establishment. He felt the major arguments of his opponents to be centred around the research aspect of the SDI program.

To counter his critics, Parnas stated simply that testing and research have never provided a trustworthy software system.



BABAK AMIRFEIZ

THE FORCE WILL NEVER BE WITH US: University computer science professor David L. Parnas described the obstacles which he believes will be impossible to overcome in deploying SDI.

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