

DEMONSTRATIVE EVIDENCE

HOW TO LAY THE FOUNDATION
TO INTRODUCE A COMPUTER
SIMULATION INTO EVIDENCE

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Introducing a computer simulation in evidence is no more difficult than introducing a photograph of a defective sidewalk. Yet there exists a residual reluctance to use and permit computer-generated evidence at trial.

Perhaps this is attributable to the bar's rampant conservatism, or perhaps the explanation is simply that attorneys are not in the habit of using such evidence and are generally unaware of the alternatives available to them.

When offering computer-generated material, computer simulations and other material produced expressly for litigation, the court must, according to the Federal Rules of Evidence, assess whether "the matter in question is what its proponent claims". Even in state court, the judge should conduct this inquiry.

Just as traditional demonstrative evidence, such as graphs and charts, are admitted in evidence under this rule, computer simulations can be used in a similar manner. Paper graphics provide simplified explanations of technical matters; simulations can, too.

This does not mean that computer simulations should be routinely admitted without question or scrutiny. Rather, it means that they should be admitted when helpful and when shown to be sufficiently reliable.

Before receiving this material in evidence, a court must hear some foundation relative to the accuracy of the simulation and the accuracy of the process that produced it. The foundation testimony should address itself to three basic areas.

First, is the underlying scientific theory valid?

Second, was the methodology applying the theory valid? Third, was the methodology correctly applied on this particular occasion?

Accordingly, in laying a foundation for the introduction of a computer simulation, there should be testimony to demonstrate that either the program or the methodology contained safeguards sufficient to reject or flag erroneously entered data, that the program reasonably provides for pertinent contingencies, that the program has built-in verification procedures, and that it has been subjected to and passed a test program with known results.

Foundation testimony for the admission of a computer simulation from a reconstruction expert in a hypothetical automobile accident case might proceed as follows:

Question: What was the source or sources of the material entered into the computer?

Answer: The exhibits previously marked in evidence in this case--the police accident investigative reports, the emergency service unit reports, the municipality's official roadway maps, the material provided by the defendant in discovery, specifications for the highway barriers and the manufacturer's specifications for the automobile involved.

Question: What kind of computer was used?

Answer: An XYZ Co. work station with a standard software graphics program.

Question: How was the material entered?

Answer: A clerk under supervision entered the material into the computer by using a numeric keyboard to type the data.

Question: What kind of program was used to process the

data?

Answer: A computer program developed by the ABC Corp., primarily to serve automobile manufacturers to predict the behavior of automobiles under various circumstances.

Question: To what extent, if any, is this particular program used by people who work in the field of accident reconstruction and computer simulation?

Answer: It is the most commonly used program and has undergone verification procedures against known data with known results so that it is generally accepted as reliable by persons in this field.

Question: Suppose the entered data is insufficient to provide definitive simulations?

Answer: If information is missing, the program is designed to assign to that information variable values that most closely correspond to the observed data. In such an instance, the simulation will state that the data was processed by assigning to the unknown information variable values.

Question: Did that occur in this case?

Answer: No.

Question: How can one know if, in fact, the material produced is reliable?

Answer: The program is tested by entering data previously calculated in a conventional manner with a known result and checking the program's output against this material.

Question: Have you viewed the computer-generated simulation?

Answer: Yes

Question: Is it a fair and accurate rendering of the manner in which you hypothesize the happening of this accident?

Answer: Yes.

Question: In three-dimensional form, does it fairly and accurately display the distances traveled, the path of the vehicle, the impact with the guiderail, the view of the driver and the evasive action that the driver and car took before impact; and does it show final resting place of the vehicle?

Answer: Yes, it does.

Question: And do you consider this simulation useful and helpful in explaining your testimony and the findings produced by your calculation?

Answer: Yes, it would be most helpful.

In this way, a lawyer can properly establish foundation and obtain the benefits of using computer simulations at trial.

Note

CPLR 4518 Federal Rule of Evidence 901(a).