What is claimed is:

1. A method comprising:

by a control circuit:

calibrating detector crosstalk information to provide calibrated detector crosstalk information;

accessing a memory having stored therein:

total detected computed tomography image signal information in a projection domain for an object;

a first model representing object scatter;

a second model representing background scatter, wherein the second model is separate and distinct from the first model; and

a third model representing detector crosstalk, wherein the third model is generated as a function, at least in part, of the calibrated detector crosstalk information; and

prior to a reconstruction step, processing the total detected computed tomography image signal information in the projection domain for the object as a function of each of the first model, the second model, and the third model to thereby compensate for object scatter, background scatter, and detector crosstalk by providing scatter and crosstalk-corrected computed tomography image signal information in the projection domain for the object.

2. The method of claim 1 further comprising:

carrying out a reconstruction step using the scatter and crosstalk-corrected computed tomography image signal information in the projection domain for the object.

3. The method of claim 1 wherein providing the scatter and crosstalk-corrected computed tomography image signal information in the projection domain for the object comprises providing the scatter and crosstalk-corrected computed tomography image signal information in the projection domain for the object without using a hardware-based scatter profile measurement.

4. The method of claim 1 further comprising:

pre-calculating an object scatter database; and

generating the first model as a function, at least in part, of the object scatter database.

5. The method of claim 4 wherein pre-calculating the object scatter database comprises pre-calculating the object scatter database only on a per material/spectrum basis.

6. The method of claim 1 further comprising:

calibrating background scatter information to provide calibrated background scatter information; and

generating the second model as a function, at least in part, of the calibrated background scatter information.

7. The method of claim 6 wherein calibrating the background scatter information comprises calibrating the background scatter information only once on a per scanner basis.

8. The method of claim 1 wherein calibrating the detector crosstalk information comprises calibrating the detector crosstalk information only once on a per scanner basis.

9. The method of claim 1 wherein processing the total detected computed tomography image signal information in the projection domain for the object as a function of each of the first model, the second model, and the third model to thereby compensate for object scatter, background scatter, and detector crosstalk by providing scatter and crosstalk-corrected computed tomography image signal information in the projection domain for the object comprises, at least in part, processing the total detected computed tomography image signal information in the projection domain for the object as a function of the third model to compensate for detector crosstalk by using inverse convolution.

10. An apparatus comprising:

a memory having stored therein:

total detected computed tomography image signal information in a projection domain for an object;

a first model representing object scatter;

a second model representing background scatter, wherein the second model is separate and distinct from the first model; and

a third model representing detector crosstalk; and

a control circuit operably coupled to the memory and configured to, prior to a reconstruction step:

calibrate detector crosstalk information to provide calibrated detector crosstalk information;

generate the third model as a function, at least in part, of the calibrated detector crosstalk information;

process the total detected computed tomography image signal information in the projection domain for the object as a function of each of the first model, the second model, and the third model to thereby compensate for object scatter, background scatter, and detector crosstalk by providing scatter and crosstalk-corrected computed tomography image signal information in the projection domain for the object.

11. The apparatus of claim 10 wherein the control circuit is further configured to:

carry out a reconstruction step using the scatter and crosstalk-corrected computed tomography image signal information in the projection domain for the object.

12. The apparatus of claim 10 wherein the control circuit is further configured to provide the scatter and crosstalk-corrected computed tomography image signal information in the projection domain for the object by providing the scatter and crosstalk-corrected computed tomography image signal information in the projection domain for the object without using a hardware-based scatter profile measurement.

13. The apparatus of claim 10 wherein the control circuit is further configured to:

pre-calculate an object scatter database; and

generate the first model as a function, at least in part, of the object scatter database.

14. The apparatus of claim 13 wherein the control circuit is further configured to pre-calculate the object scatter database by pre-calculating the object scatter database only on a per material/spectrum basis.

15. The apparatus of claim 10 wherein the control circuit is further configured to:

calibrate background scatter information to provide calibrated background scatter information; and

generate the second model as a function, at least in part, of the calibrated background scatter information.

16. The apparatus of claim 15 wherein the control circuit is further configured to calibrate the background scatter information by calibrating the background scatter information only once on a per scanner basis.

17. The apparatus of claim 10 wherein the control circuit is further configured to calibrate the detector crosstalk information by calibrating the detector crosstalk information only once on a per scanner basis.

18. The apparatus of claim 10 wherein the control circuit is further configured to process the total detected computed tomography image signal information in the projection domain for the object as a function of each of the first model, the second model, and the third model to thereby compensate for object scatter, background scatter, and detector crosstalk by providing scatter and crosstalk-corrected computed tomography image signal information in the projection domain for the object by, at least in part, processing the total detected computed tomography image signal information in the projection domain for the object as a function of the third model to compensate for detector crosstalk by using inverse convolution.