Greenhouse Gas Inventory Information System

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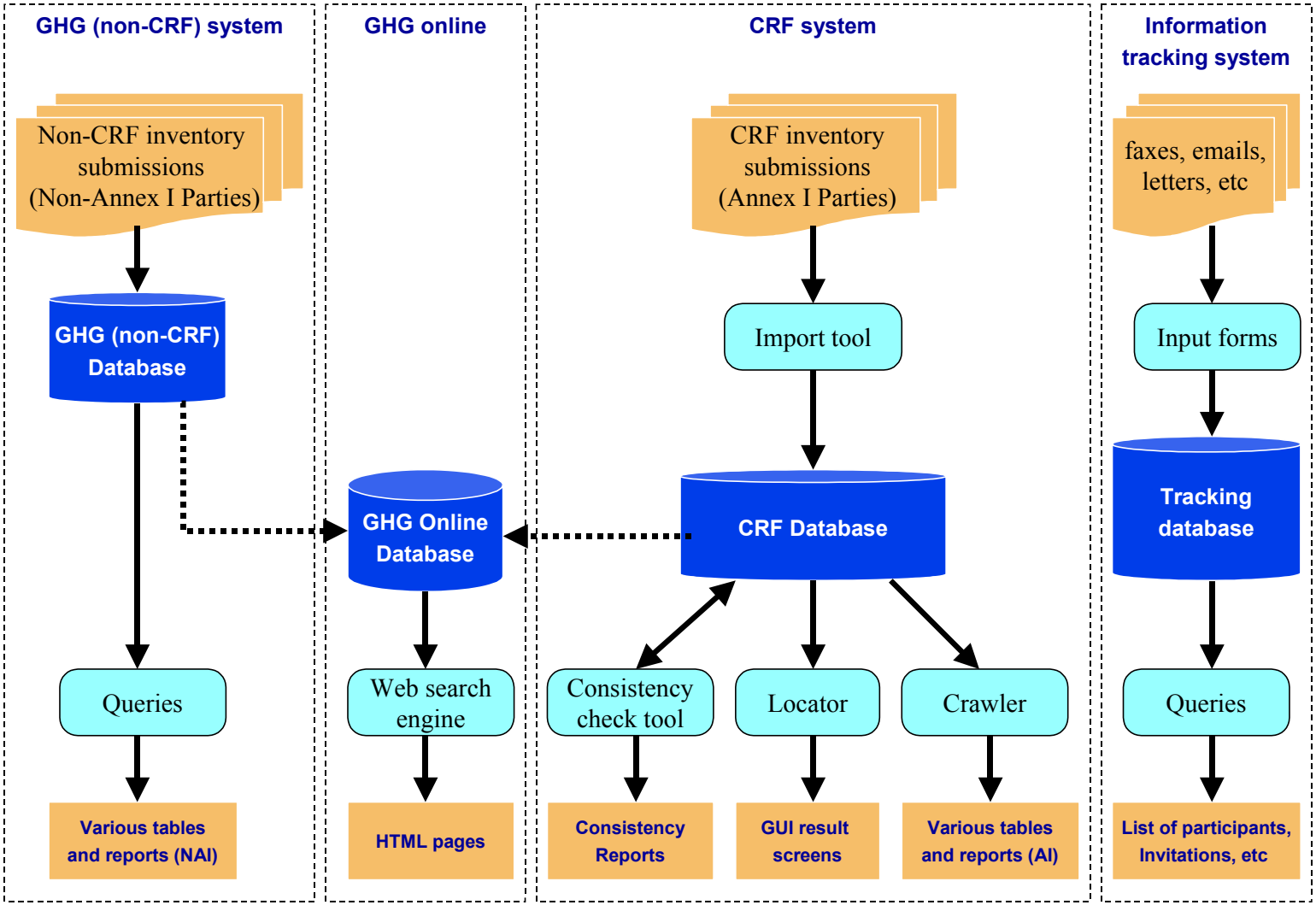
GHG Inventories

- Importance of GHG inventories
  - Fundamental to achieve the Convention's objectives
  - Essential for assessing the implementation of the Convention
- Secretariat's role - to ensure that credible GHG data are available to the COP by:
  - Reporting periodically on GHG emissions and trends, and providing related methodological and data analysis
  - Organizing and supporting the technical review process of GHG inventories

GHG Inventory Information System



GHG Online Database

Web search engine for public access: *http://ghg.unfccc.int*

- Selection by Party (Annex I and non-Annex I), Gas, Emission Source (IPCC),Years
- Tabular output in HTML

Emission sources by parties for CO_2 in 2000 (in Gigagrams)

	TOTAL Fuel Combustion (Sectoral Approach)	TOTAL Fugitive Emissions from Fuels	TOTAL Industrial Processes	TOTAL Solvent and Other Product Use	TOTAL Agriculture	TOTAL Land-Use Change & Forestry	TOTAL Waste	TOTAL International Bunkers	Total
Australia	332,716	6,487	7,787			32,846	16	10,197	390,049
Canada	516,513	14,802	40,067		-236	-16,489	282	6,472	561,410
Portugal	57,106	289	5,070	279		-4,216	406	2,526	61,460
United States of America	5,645,957	32,142	161,940			-902,495		100,228	5,037,772
Total	6,552,291	53,721	214,864	279	-236	-890,354	704	119,423	

Select Annex I Party (Country) | Select non-Annex I Party (Country) | Select gas | Select source | Select year | Show current selections | Reset selection | Show Data

The Web is also used to disseminate information to the review experts and to publish the results of the inventory reviews. A password protected download area is available for review experts.

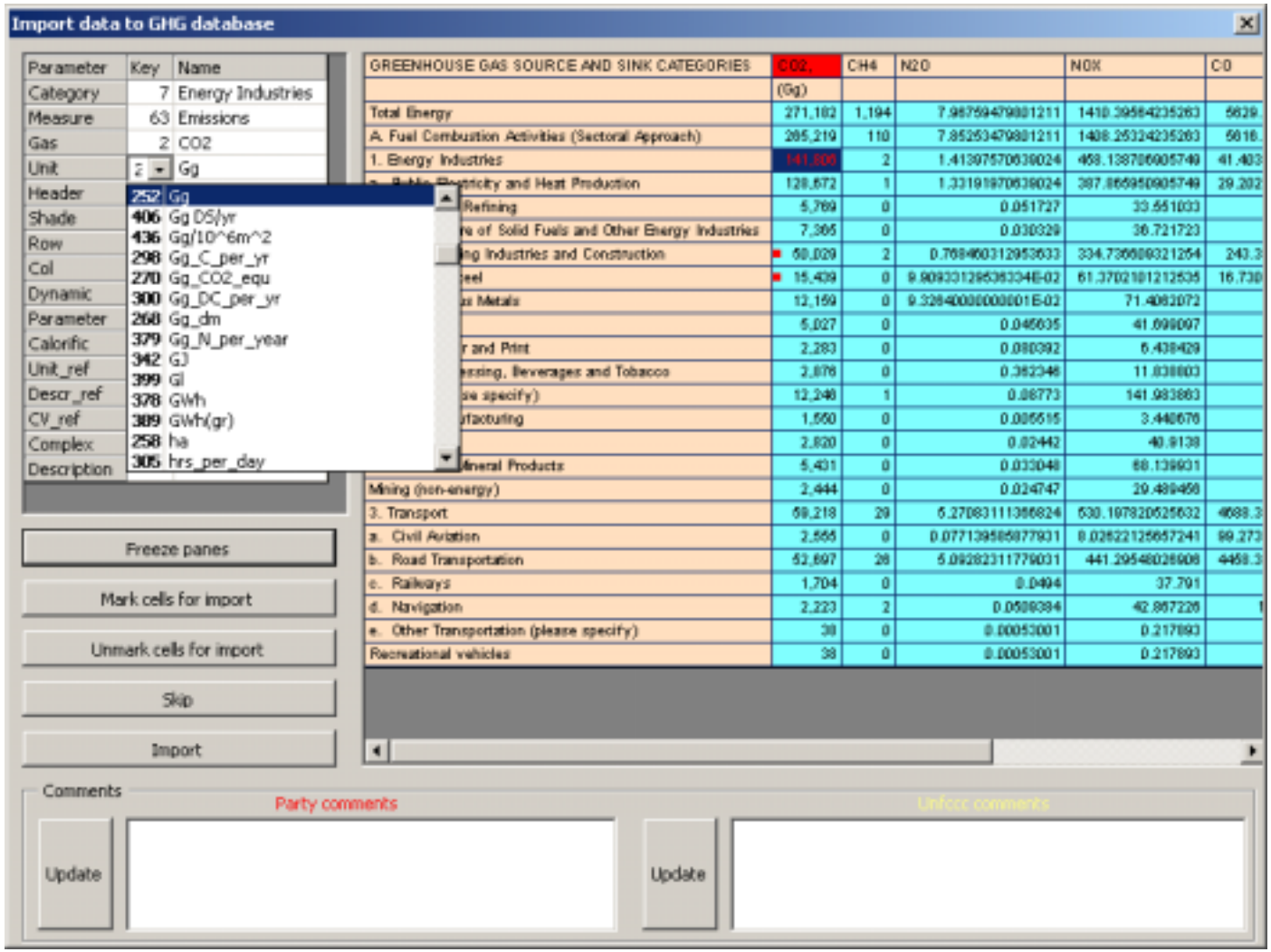
Common Reporting Format

- At COP 5 in 1999, the Common Reporting Format (CRF) was adopted to be used beginning from 2000 for reporting Annex I Parties' national GHG inventories
- Trial period for reporting and reviewing of national GHG inventories using CRF from 2000 to 2002 was adopted
- With the CRF format the complexity and amount of reported data significantly increased

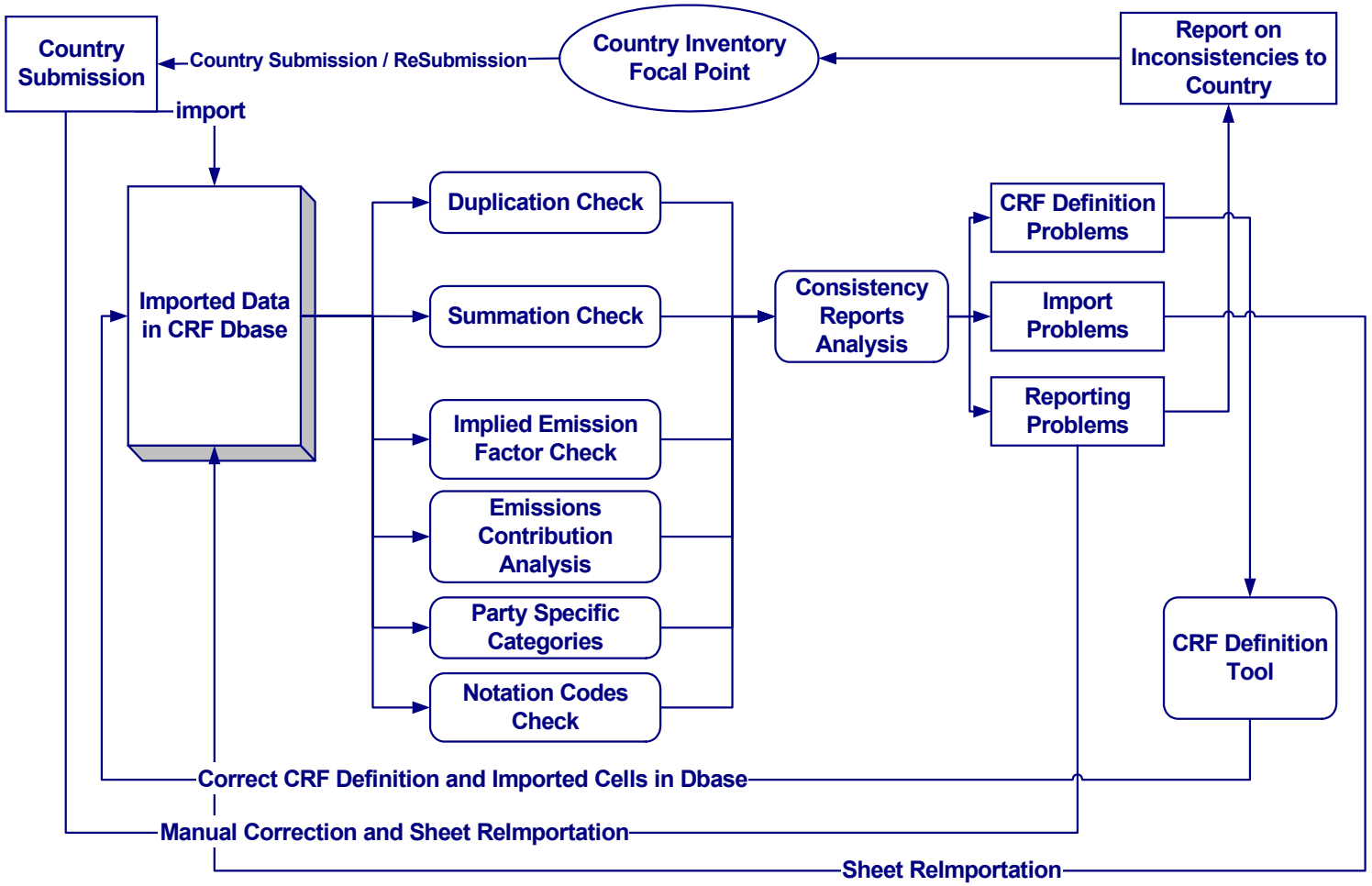
CRF software

- MS Excel based application with 64 worksheets
- Reflects directly the CRF tables as adopted
- Serves both input and output purposes
- CRF tables are built up on 4 levels: SBDT, SRT, Summary and Other tables
- The figures are propagated from lower level to the higher
- Contains redundant information

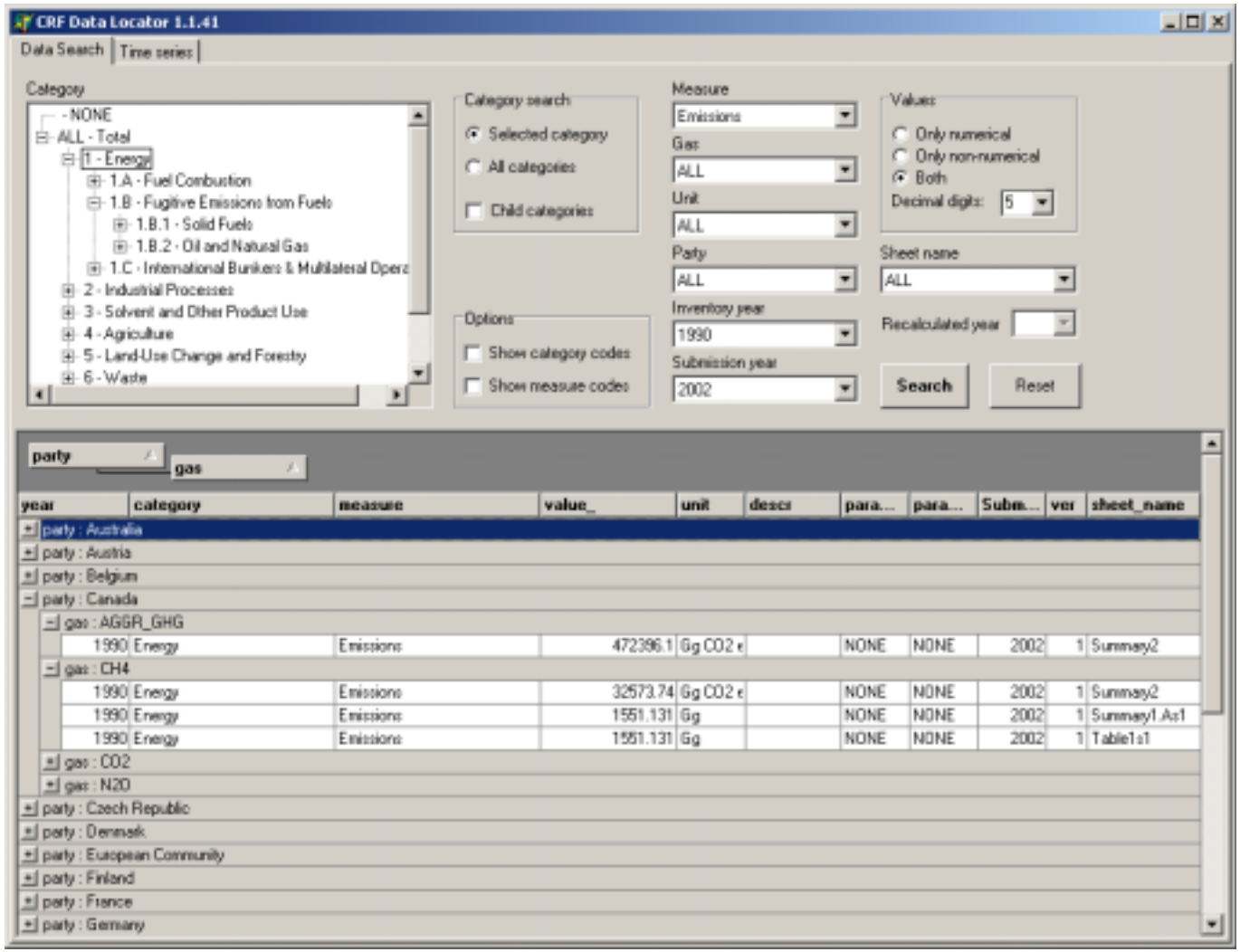
CRF Import Program



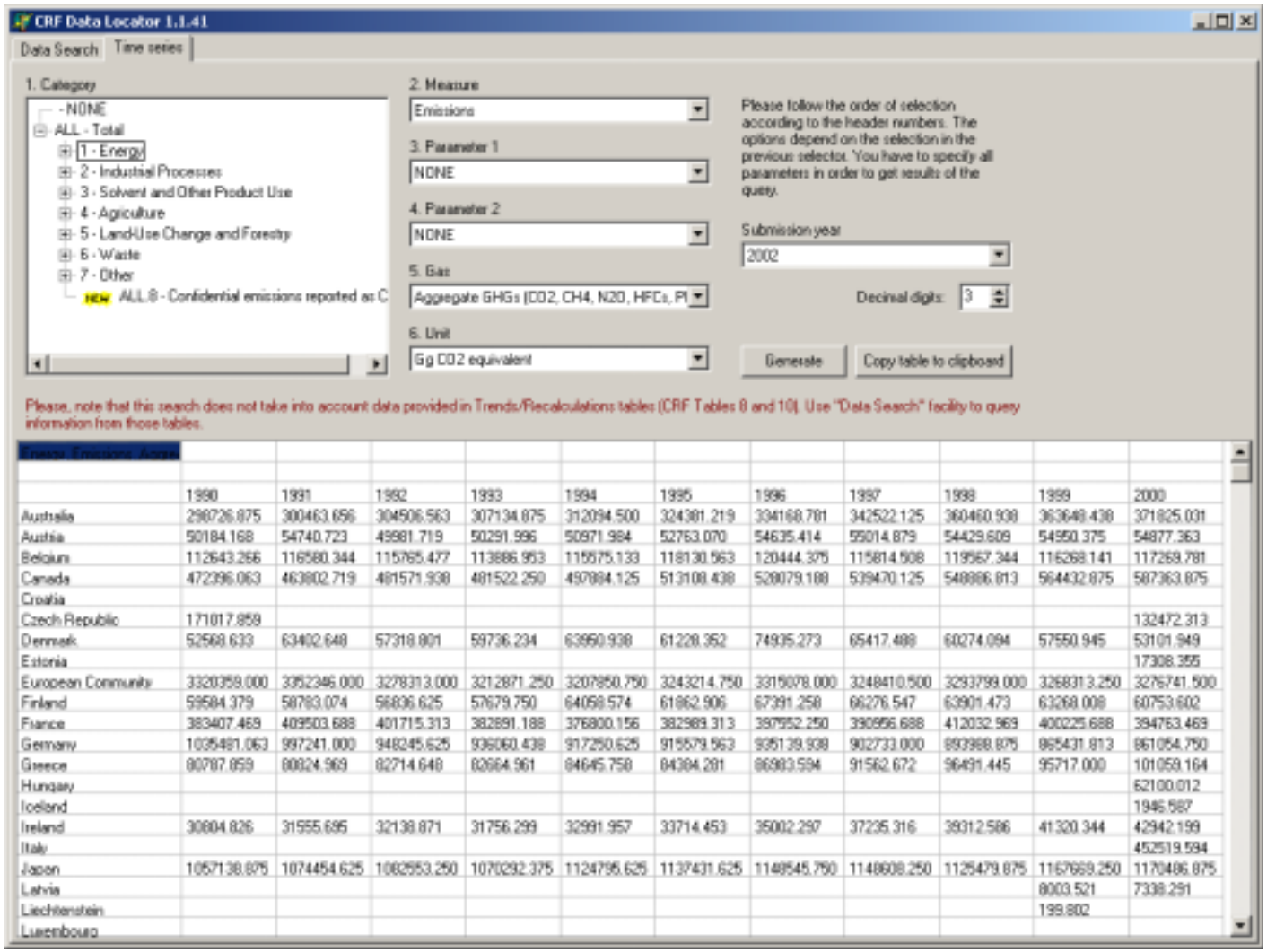
Import monitoring and consistency check workflow



Locator (Data Search)



Locator (Time Series)



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Australia	298726.875	300463.656	304506.563	307134.875	312094.500	324381.219	334168.781	342522.125	360460.938	363648.438	371825.031
Austria	50184.168	54740.723	49981.719	50291.996	50971.984	52763.070	54635.414	55014.879	54429.609	54950.375	54877.363
Belgium	112643.266	116580.344	115765.477	113886.953	115575.133	118130.563	120444.375	115814.508	119567.344	116268.141	117269.781
Canada	472396.063	463802.719	481571.938	481522.250	497884.125	513108.438	528079.188	539470.125	548886.813	564432.875	587363.875
Croatia											
Czech Republic	171017.859										132472.313
Denmark	52568.633	63402.648	57318.801	59736.234	63950.938	61228.352	74935.273	65417.488	60274.094	57550.945	53101.949
Estonia											17308.355
European Community	3320359.000	3352346.000	3278313.000	3212871.250	3207850.750	3243214.750	3315078.000	3248410.500	3293799.000	3268313.250	3276741.500
Finland	59584.379	58783.074	56836.625	57679.750	64058.574	61862.906	67391.258	66276.547	63901.473	63268.008	60753.602
France	383407.469	409503.688	401715.313	382891.188	376800.156	382989.313	397552.250	390956.688	412032.969	400225.688	394763.469
Germany	1035481.063	997241.000	948245.625	936060.438	917250.625	915579.563	935139.938	902733.000	893988.875	865431.813	861054.750
Greece	80787.859	80824.969	82714.648	82664.961	84645.758	84384.281	86983.594	91562.672	96491.445	95717.000	101059.164
Hungary											62100.012
Iceland											1946.587
Ireland	30804.826	31555.695	32138.871	31756.299	32991.957	33714.453	35002.297	37235.316	39312.586	41320.344	42942.199
Italy											452519.594
Japan	1057138.875	1074454.625	1082953.250	1070292.375	1124795.625	1137431.625	1148545.750	1148608.250	1125479.875	1167969.250	1170486.875
Latvia										8003.521	7338.291
Liechtenstein										199.802	
Luxembourg											

Crawler - table designer/generator

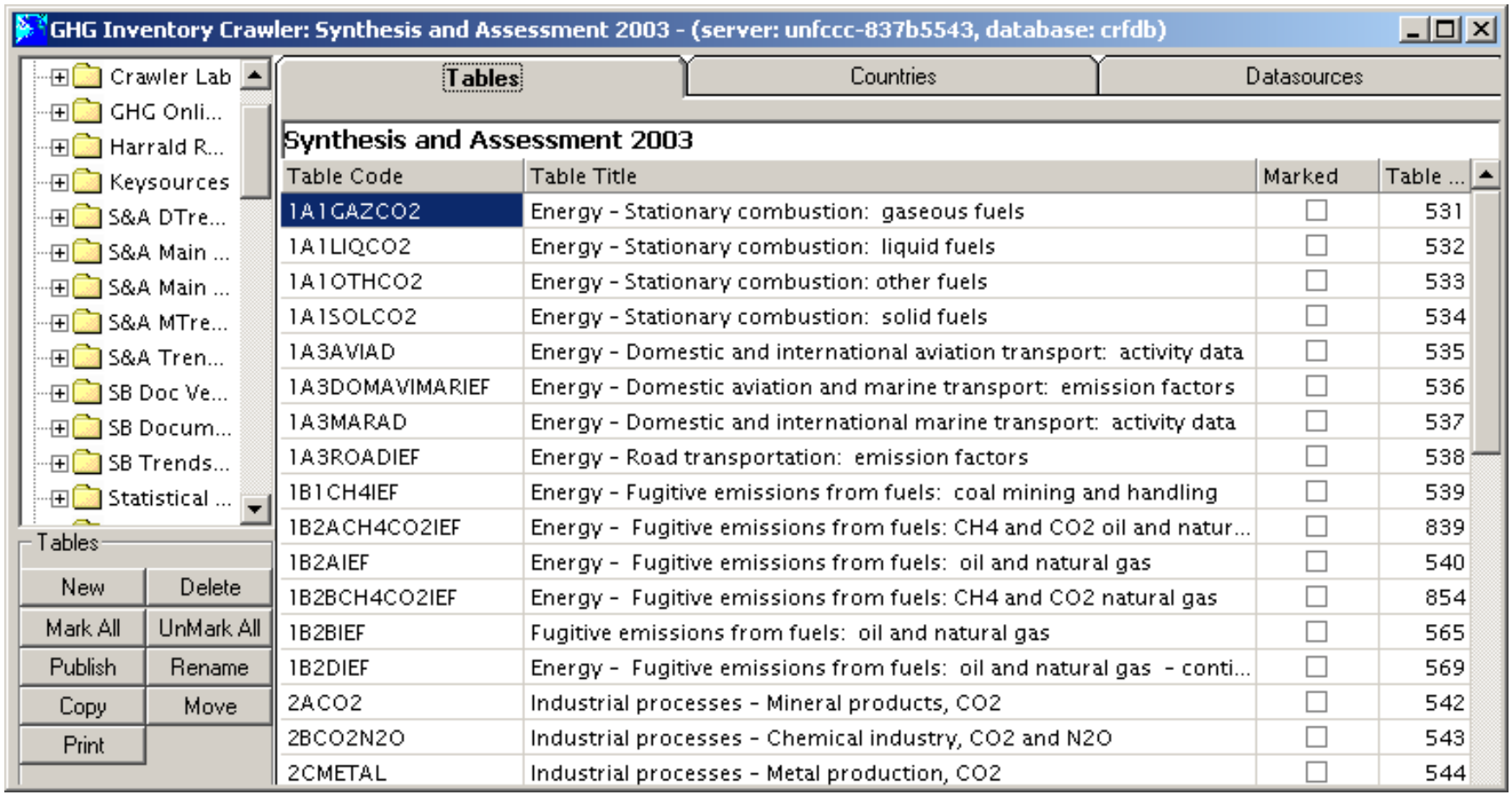


Table Code	Table Title	Marked	Table ...
1A1GAZCO2	Energy - Stationary combustion: gaseous fuels	☐	531
1A1LIQCO2	Energy - Stationary combustion: liquid fuels	☐	532
1A1OTHCO2	Energy - Stationary combustion: other fuels	☐	533
1A1SOLCO2	Energy - Stationary combustion: solid fuels	☐	534
1A3AVIAD	Energy - Domestic and international aviation transport: activity data	☐	535
1A3DOMAVIMARIEF	Energy - Domestic aviation and marine transport: emission factors	☐	536
1A3MARAD	Energy - Domestic and international marine transport: activity data	☐	537
1A3ROADIEF	Energy - Road transportation: emission factors	☐	538
1B1CH4IEF	Energy - Fugitive emissions from fuels: coal mining and handling	☐	539
1B2ACH4CO2IEF	Energy - Fugitive emissions from fuels: CH4 and CO2 oil and natur...	☐	839
1B2AIEF	Energy - Fugitive emissions from fuels: oil and natural gas	☐	540
1B2BCH4CO2IEF	Energy - Fugitive emissions from fuels: CH4 and CO2 natural gas	☐	854
1B2BIEF	Fugitive emissions from fuels: oil and natural gas	☐	565
1B2DIEF	Energy - Fugitive emissions from fuels: oil and natural gas - conti...	☐	569
2ACO2	Industrial processes - Mineral products, CO2	☐	542
2BCO2N2O	Industrial processes - Chemical industry, CO2 and N2O	☐	543
2CMETAL	Industrial processes - Metal production, CO2	☐	544

Development tools

- VB, VBA, Delphi
- MS SQL Server, MS Access
- Webbase (web server)

Where we are now

- CRF system was developed with a "demand-driven" approach simultaneously with the establishment of new reporting and review processes
- CRF database is designed primarily to store all submitted national inventories as-is, it is not analysis-oriented
- The system is still under development

Lessons learned

- Careful technical design of data collection format is very important. Current CRF application in MS Excel format is too much flexible and provides almost no means for data verification
- The architecture of an IT system with unknown and/or rapidly changing requirements should be as flexible as possible
- Resources needed to develop a complex IT system should not be underestimated

Planned developments

- Development of a new version of CRF reporting software taking into account the revisions to the CRF
- Integration of the existing databases into one data warehouse concept with a more flexible n-dimensional data model
- Enhancement of data analysis tools with graphical output and statistical functions
- Integration of international statistical data
- Improvement of the web search engine to allow searching for more disaggregated data