

Programs are designed to work at Ignalina Nuclear Power Plant.

### SLW Containers Information.

“SLW Containers Information” connects to SQL data base, takes and analyses data, shows a result at the screen.

The information can be obtained for all containers with radioactive waste and for a custom container (with entered container number).

Column results (sum, count, count by type, range, date range) are shown where applicable.

Interface language can be chosen.

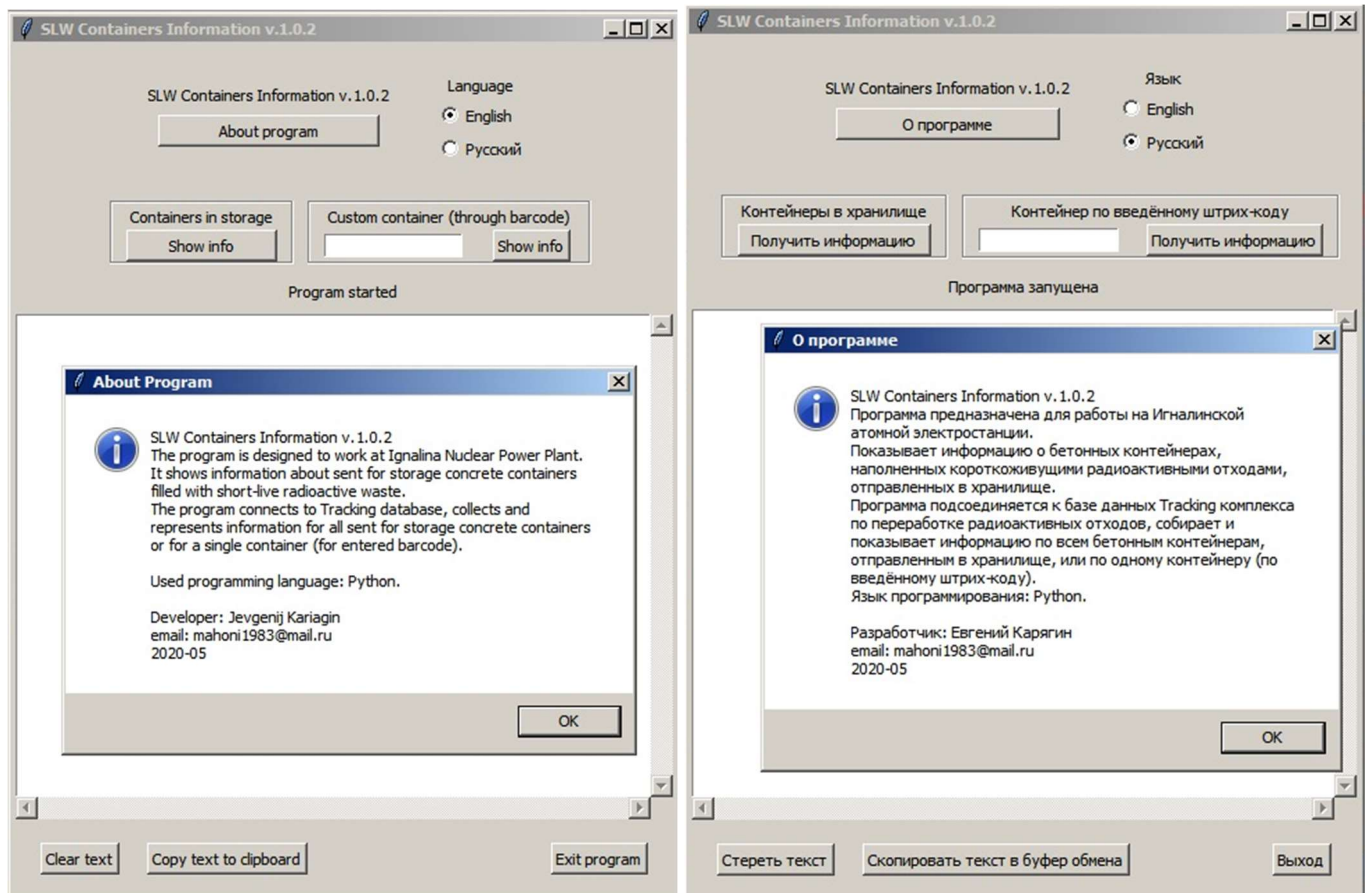
Information window can be opened by pressing “About program” button.

Obtained information can be copied to a clip board and cleared from the program window.

Singleton design pattern is implemented.

Programming language: Python

Release: 2020



SLW Containers Information v.1.0.2

SLW Containers Information v.1.0.2

About program

Language  
☒ English  
☐ Русский

Containers in storage  
Show info

Custom container (through barcode)  
  
Show info

Connected to Tracking database successfully

2020-06-15 14:33:37

	X	Y	Z	Container	Waste type	Mass brutto, kg	Mass netto, kg	Date grouted	Drums count	Drums mass, kg	Drums volume, m3	DR mea mSv/h
1	0	0	0	100000000185	Drums	8510	1560		7	1020	0.42	0.0001
2	0	0	0	100000000196	Drums	13912	6962	2017-12-15 19:56:52.787000	46	3117	1.84	0.0032
3	0	1	0	100000000197	Drums	13825	6875	2018-06-18 10:55:17.347000	50	3686	2.12	0.0065
4	0	2	0	200000000454	Mixed	14936	7986	2018-12-14 09:39:28.907000	12	1053	0.52	0.0084
5	0	3	0	200000000501	Drums	14950	8000	2019-02-20 10:04:01.147000	36	3387	1.82	0.0057
6	0	4	0	200000000431	Bulk	14998	8048	2019-08-19 10:55:07.453000				0.0084
7	0	5	0	200000000537	Drums	13723	6773	2019-08-23 08:47:36.960000	38	3140	1.65	0.0037
8	1	0	0	200000000459	Mixed	13723	6773	2019-08-26 13:12:05.030000	31	2001	1.29	0.0087
9	10	10	1	100000000155		7662	5162	2017-09-21 14:54:17.280000				0.0001
10	17	5	1	100000000149	Drums	13912	4450	2017-12-19 10:31:25.220000	2	109	0.08	0.0001
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	each count:	count:	each count:	sum:	range date:	sum:	sum:	sum:	range:
-	-	-	-	0: 8	10	Drums: 6	130151	2017-09-21 14:54:17.280000	222	17513	9.74	0.0001
-	-	-	-	1: 2		Mixed: 2		2019-08-26 13:12:05.030000				0.0087
-	-	-	-	Bulk: 1								
-	-	-	-	: 1								

Clear text
Copy text to clipboard
Exit program

SLW Containers Information v.1.0.2

SLW Containers Information v.1.0.2

О программе

Язык  
☐ English  
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Контейнеры в хранилище  
Получить информацию

Контейнер по введенному штрих-коду  
  
Получить информацию

Соединение с базой данных Tracking установлено успешно

Введен штрих-код: 100000000196

	X	Y	Z	Контейнер	Тип отходов	Масса полная, кг	Масса нетто, кг	Зацементирован	Кол-во бочек	Масса бочек, кг	Объем бочек, м3	Ср. МЭД мЗв/ч
1	0	0	0	100000000196	Drums	13912	6962	2017-12-15 19:56:52.787000	46	3117	1.84	0.003

Стереть текст
Скопировать текст в буфер обмена
Выход

## LLW Containers Information.

“LLW Containers Information” connects to SQL data base, takes and analyses data, shows the result at the screen.

The information can be obtained for all containers with highly active radioactive waste and for a custom container (with entered container number).

Column results (sum, count, count by type, range, date range) are shown where applicable.

Interface language can be chosen.

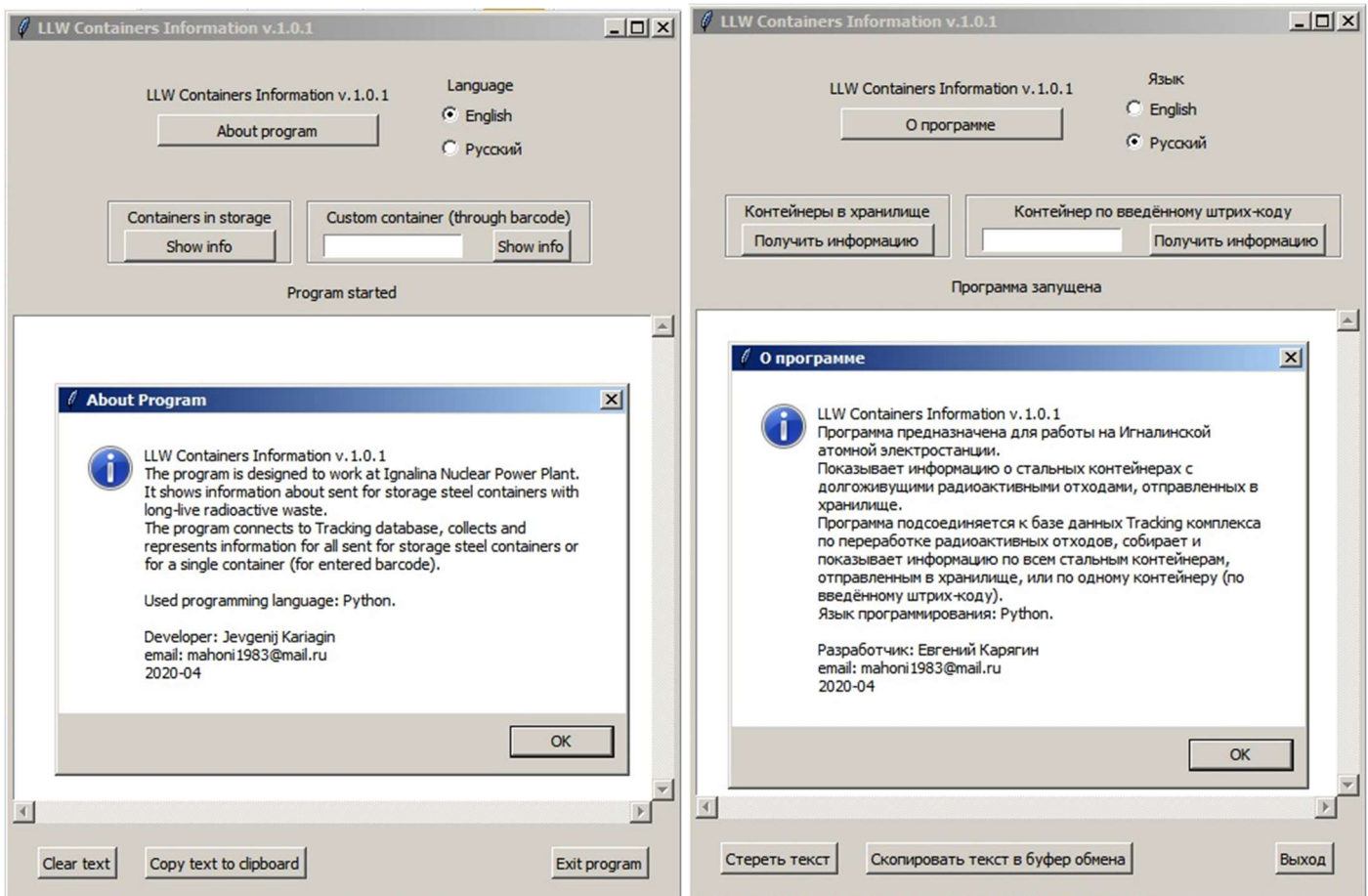
Information window can be opened by pressing “About program” button.

Obtained information can be copied to a clip board and cleared from the program window.

Singleton design pattern is implemented.

Programming language: Python

Release: 2020



LLW Containers Information v.1.0.1

Language  
☒ English  
☐ Русский

About program

Containers in storage  
Show info

Custom container (through barcode)  
1000000000401  
Show info

Connected to Trading database successfully

2020-06-15 14:18:55

X	Y	Z	Container	Stored date	Waste	Mass netto, kg	DR mean, mSv/h	DR max, mSv/h	Measured date	Remark
1	0	0	100000000122	2017-07-15 15:00:23.080000	Class C		0.000101	9.4e-05	2017-07-15 14:54:08	uhhjkhkh
2	0	0	100000000408	2020-01-14 09:58:17.603000	Metal	1389	261.23	712.54	2020-01-13 12:53:06	R.Selifanov
3	0	1	200000000531	2019-03-18 09:23:07.680000		3810	686.44	1790.2	2019-03-14 14:24:49	
4	0	2	200000000484	2020-03-26 13:20:21.157000	Metal	3222	1018.3	2503.2	2020-03-26 10:18:53	
5	0	3	100000000407	2020-01-02 10:47:43.963000	Metal	1978	279.75	749.95	2019-12-30 11:10:04	2019.12.05
6	0	5	200000000480	2018-12-31 13:37:28.583000		3270	707.26	2192.5	2018-12-31 13:30:28	
7	0	5	100000000401	2019-08-14 12:17:21.203000	Metal	2677	722.63	2374.8	2019-08-14 10:24:16	Turcaninof
8	0	5	100000000405	2019-12-06 09:10:30.263000	Metal	3143	679.95	1602.7	2019-12-05 14:01:56	032
9	0	6	200000000561	2019-07-16 14:15:53.540000	Metal	2860	825.77	2192.7	2019-07-16 09:46:52	2009 04 15
10	0	7	200000000552	2019-04-24 14:40:15.130000	Metal	2065	585.82	1397.4	2019-04-24 14:19:16	G3
11	1	0	100000000333	2020-05-13 14:38:51.127000	Metal	2091	1106	3100.3	2020-05-13 11:27:15	
12	1	1	100000000337	2020-05-29 11:33:22.087000	FVC	1708	1512.1	5064.2	2020-05-29 08:35:45	2020-03-27 g3 pvc vkladis:
13	1	5	200000000335	2020-03-27 13:26:46.050000	Metal	2048	853.82	2159.6	2020-03-27 12:08:03	
14	1	6	100000000413	2020-06-11 13:57:56.267000		2017	812.83	1889.2	2020-06-11 11:49:13	
15	9	3	200000000433	2019-11-20 12:07:52.987000	Metal	2281	982.12	2909.3	2019-11-20 11:12:17	
16	9	4	200000000450	2019-11-21 11:15:18.620000		3258	1040.9	2570.1	2019-11-21 10:53:42	
17	10	2	200000000458	2019-11-22 12:52:49.253000		2845	768.59	2354.6	2019-11-22 12:42:13	2018.09.12
18	10	3	200000000483	2019-09-12 14:18:22.530000	Metal	2720	2280.9	10156	2019-09-12 13:55:09	
19	10	4	100000000204	2020-06-09 10:40:47.780000		2398	1397.5	6940.6	2019-08-22 13:27:00	first container with LL w
20	11	3	200000000317	2019-11-20 14:01:02.307000		2887	1300.6	3281	2019-11-20 13:54:02	empty
21	19	4	100000000409	2020-03-26 09:27:44.420000	FVC	1000	0.2627	0.8862	2020-03-26 08:17:46	Alekseev
22	23	0	100000000238	2019-12-13 13:56:18.733000	Sources	1000	0.0073	0.0529	2019-12-13 10:50:02	Spent sources. LILW-LL0000
23	23	0	200000000556	2020-06-09 09:03:47.117000	Sources	3776	0.0206	0.2005	2020-06-09 08:32:13	Spent sources. LLW
24	23	1	200000000526	2019-02-05 14:32:16.680000	Sources	3000	0.0115	0.066	2019-02-05 14:16:39	Spent sources. LILW-LL0000
25	23	1	100000000338	2020-06-01 10:23:36.063000	Sources	1290	0.0136	0.0451	2020-06-01 08:58:33	
26	24	0	100000000239	2018-02-22 07:54:53.650000	Sources		0.016184	0.096604	2018-02-19 14:06:16	Spent sources. LILW-LL0000
27	24	0	100000000387	2019-04-25 14:52:04.500000	Sources	5124	0.0066	0.0176	2019-04-25 14:42:21	2019.04.15
28	24	1	200000000551	2019-03-19 09:08:14.643000	Sources	3420	0.1005	2.4907	2019-03-18 11:37:59	2019.03.15 lilw-1100005
29	24	1	100000000389	2019-05-15 16:34:10.527000	Sources	3000	0.0072	0.039	2019-05-15 14:05:08	istochniki
-	-	-	each count:	count:	range date:	each count:	sum:	range:	range:	range date:
-	-	-	None: 1	29	2017-07-15 15:00:23.080000	Class C: 1	70277	0.000101	9.4e-05	2017-07-15 14:54:08
-	-	-	0: 24		2020-06-11 13:57:56.267000	Metal: 11		2280.9	10156	2020-06-11 11:49:13
-	-	-	1: 4			: 7				
-	-	-				FVC: 2				
-	-	-				Sources: 8				

Clear text Copy text to clipboard Exit program

LLW Containers Information v.1.0.1

Язык  
☐ English  
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О программе

Контейнеры в хранилище  
Получить информацию

Контейнер по введённому штрих-коду  
1000000000401  
Получить информацию

Соединение с базой данных Tracking установлено успешно

Введён штрих-код: 1000000000401

2020-06-15 14:20:56

X	Y	Z	Контейнер	Дата установки	Отходы	Масса нетто, кг	Ср. МЭД, мЗв/ч	Макс. МЭД, мЗв/ч	Дата измерения	Заметки
1	0	5	100000000401	2019-08-14 12:17:21.203000	Metal	2677	722.63	2374.8	2019-08-14 10:24:16	Turcaninof

Стереть текст Скопировать текст в буфер обмена Выход



## MST16 Loaded Drums Information.

“MST16 Loaded Drums Information” connects to SQL data base, takes and analyses data, shows the result at the screen.

The information can be obtained for a current (that is being loaded with radioactive waste) or custom (with entered container number) container.

Column results (sum, count, count by type, range, date range) are shown where applicable.

Interface language can be chosen.

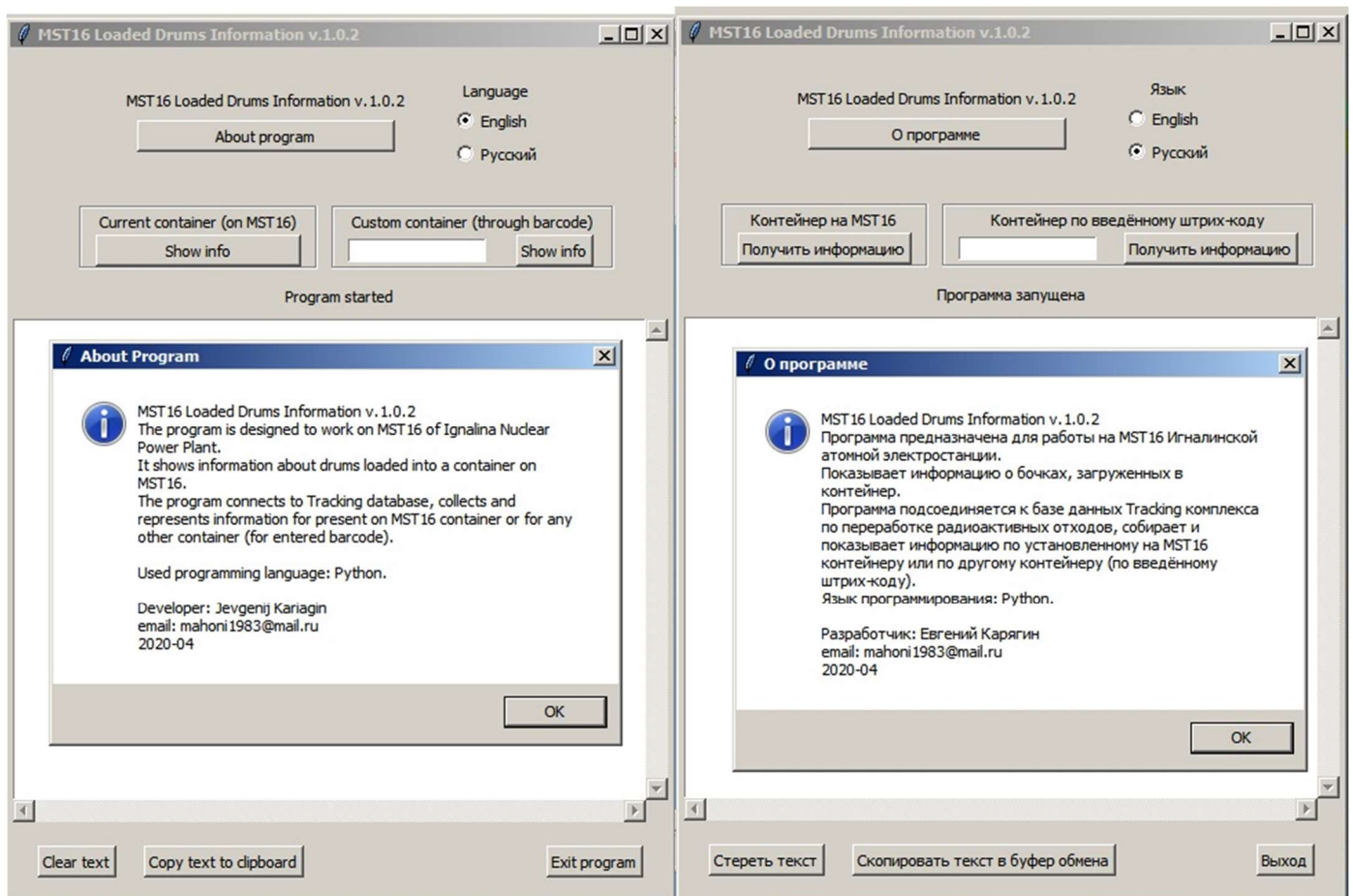
Information window can be opened by pressing “About program” button.

Obtained information can be copied to a clip board and cleared from the program window.

Singleton design pattern is implemented.

Programming language: Python

Release: 2020



☒ English  
☐ Русский

About program

Current container (on MST16)

Show info

Custom container (through barcode)

Show info

Connected to Tracking database successfully

	Container	Drum	Position	Loaded date	Waste	Nuclide Vector	Height, mm	Measurement date	Mass brutto, kg	Mass netto, kg
1	100000000342	200000000696	1A	2020-07-13 09:48:51.560000	Concrete	NV.157.10.2	316	2020-06-30 10:58:20	208	182
2	100000000342	200000000690	1B	2020-07-13 09:48:51.603000	PVC	NV.157.10.3	500	2020-07-24 09:35:17	97	76
3	100000000342	200000000683	1C	2020-07-13 09:48:51.637000	PVC	NV.157.10.3	412	2020-07-24 10:36:08	85	64
4	100000000342	200000000693	2B	2020-07-13 09:48:51.667000	PVC	NV.157.10.3	400	2020-07-24 10:56:10	107	86
5	100000000342	200000000685	2A	2020-07-13 09:48:51.713000	Filter	NV.157.10.2	146	2020-04-28 09:42:40	44	23
6	100000000342	100000000334	2C	2020-07-13 09:48:51.747000	Filter	NV.157.10.2	136	2020-03-31 09:19:53	48	24
7	100000000342	200000000671	2A	2020-08-11 10:31:14.983000	G2 waste mix	NV.157.10.2	217	2020-06-01 10:27:08	55	34
8	100000000342	200000000649	1A	2020-08-11 10:36:08.770000	Metal	NV.157.10.2	131	2020-02-20 09:49:28	84	63
9	100000000342	100000000657	1B	2020-08-11 10:46:51.850000	G2 waste mix	NV.157.10.2	231	2020-02-28 12:54:56	73	52
-	-	-	-	-	-	-	-	-	-	-
-	-	count:	each count:	range date:	each count:	each count:	sum:	range date:	sum:	sum:
-	-	9	1A: 2	2020-07-13 09:48:51.560000	Concrete: 1	NV.157.10.2: 6	2489	2020-02-20 09:49:28	793	604
-	-	-	1B: 2	2020-08-11 10:46:51.850000	PVC: 3	NV.157.10.3: 3	-	2020-07-24 10:56:10	-	-
-	-	-	1C: 1	-	Filter: 2	-	-	-	-	-
-	-	-	2B: 1	-	G2 waste mix: 2	-	-	-	-	-
-	-	-	2A: 2	-	Metal: 1	-	-	-	-	-
-	-	-	2C: 1	-	-	-	-	-	-	-

Clear text

Copy text to clipboard

Exit program

☐ English  
☒ Русский

О программе

Контейнер на MST16

Получить информацию

Контейнер по введённому штрих-коду

100000000197

Получить информацию

Соединение с базой данных Tracking установлено успешно

Введён штрих-код: 100000000197

2020-06-15 14:30:28

	Контейнер	Бочка	Позиция	Дата загрузки	Отходы	Нуклидный вектор	Высота, мм	Дата измерения	Масса brutto, кг	Масса netto, кг
1	100000000197	200000000381	1A	2018-01-29 03:59:03.143000	Mineral Wadding	NV.157.10.2	185	2018-01-29 09:59:01	98	77
2	100000000197	200000000326	1B	2018-01-29 03:59:03.173000	Mineral Wadding	NV.157.10.2	135	2018-01-03 09:10:31	81	60
3	100000000197	200000000311	1C	2018-01-29 03:59:03.203000	Metal	NV.157.10.2	155	2018-01-03 08:34:45	126	105
4	100000000197	200000000321	2B	2018-01-29 03:59:03.237000	Mineral Wadding	NV.157.10.2	145	2018-01-03 08:02:14	63	42
5	100000000197	200000000336	2A	2018-01-29 03:59:03.250000	Mineral Wadding	NV.157.10.2	145	2018-01-08 10:31:47	57	36
6	100000000197	200000000320	2C	2018-01-29 03:59:03.300000	Mineral Wadding	NV.157.10.2	145	2018-01-02 14:33:01	57	36
7	100000000197	200000000379	2C	2018-01-29 13:29:31.410000	Mineral Wadding	NV.157.10.2	175	2018-01-29 10:50:00	74	53
8	100000000197	200000000383	1C	2018-01-29 13:42:26.687000	Mineral Wadding	NV.157.10.2	155	2018-01-29 12:49:26	81	60
9	100000000197	200000000319	2B	2018-01-29 14:05:31.140000	Mineral Wadding	NV.157.10.2	145	2018-01-02 13:18:04	63	42
10	100000000197	200000000382	1B	2018-01-29 14:38:03.143000	Metal	NV.157.10.2	215	2018-01-29 13:27:30	130	109
11	100000000197	200000000384	2A	2018-01-29 14:48:34.367000	Mineral Wadding	NV.157.10.2	155	2018-01-29 14:00:25	95	74
12	100000000197	200000000322	2A	2018-01-30 10:24:43.977000	Mineral Wadding	NV.157.10.2	135	2018-01-03 09:53:10	44	23
13	100000000197	200000000318	1A	2018-01-30 10:58:07.143000	Mineral Wadding	NV.157.10.2	155	2018-01-02 11:48:10	63	42
14	100000000197	200000000316	2B	2018-01-30 11:24:01.173000	Mineral Wadding	NV.157.10.2	145	2018-01-02 11:05:40	57	36
15	100000000197	200000000312	1B	2018-01-30 11:24:15.493000	Mineral Wadding	NV.157.10.2	175	2018-01-02 10:17:01	90	69
16	100000000197	200000000309	2C	2018-01-30 13:24:43.670000	Mineral Wadding	NV.157.10.2	145	2017-12-28 13:29:58	61	40
17	100000000197	200000000305	1C	2018-01-30 13:25:08.100000	Mineral Wadding	NV.157.10.2	145	2017-12-28 11:13:13	70	49
18	100000000197	200000000335	1C	2018-01-30 13:26:30.673000	Mineral Wadding	NV.157.10.2	145	2018-01-08 09:57:38	63	42
19	100000000197	200000000323	2C	2018-01-30 13:27:00.843000	Mineral Wadding	NV.157.10.2	145	2018-01-03 10:40:11	56	35
20	100000000197	200000000327	2B	2018-01-30 13:36:00.277000	Mineral Wadding	NV.157.10.2	145	2018-01-03 11:48:02	56	35
21	100000000197	200000000346	1B	2018-01-30 13:42:51.463000	Mineral Wadding	NV.157.10.2	165	2018-01-11 10:23:49	53	32
22	100000000197	200000000350	2A	2018-01-30 13:55:22.620000	Mineral Wadding	NV.157.10.2	145	2018-01-11 11:03:34	59	38
23	100000000197	200000000349	1A	2018-01-30 14:09:28.187000	Filter	NV.157.10.2	225	2018-01-11 12:24:57	90	69
24	100000000197	200000000289	2C	2018-01-31 14:05:19.107000	Metal	NV.157.10.2	135	2017-12-18 14:34:59	112	91
25	100000000197	200000000288	1C	2018-01-31 14:24:11.247000	Metal	NV.157.10.2	125	2017-12-19 10:01:53	77	56
26	100000000197	200000000294	2C	2018-01-31 14:32:23.863000	Mineral Wadding	NV.157.10.2	145	2017-12-22 12:01:49	65	44
27	100000000197	200000000296	2C	2018-01-31 14:40:07.900000	Mineral Wadding	NV.157.10.2	145	2017-12-22 14:00:44	52	31
28	100000000197	200000000385	2A	2018-01-31 14:54:33.453000	Mineral Wadding	NV.157.10.2	165	2018-01-30 10:41:06	51	30
29	100000000197	200000000290	1A	2018-01-31 15:05:04.240000	Mineral Wadding	NV.157.10.2	165	2017-12-21 13:11:48	49	28
30	100000000197	200000000386	1C	2018-01-31 16:34:08.903000	Mineral Wadding	NV.157.10.2	155	2018-01-30 09:36:39	68	47
31	100000000197	200000000307	1B	2018-01-31 16:40:41.667000	Mineral Wadding	NV.157.10.2	145	2017-12-28 09:26:20	39	21
32	100000000197	200000000302	2B	2018-01-31 16:49:53.580000	Mineral Wadding	NV.157.10.2	145	2017-12-27 13:58:19	63	42
33	100000000197	200000000297	2A	2018-01-31 16:54:30.090000	Mineral Wadding	NV.157.10.2	145	2017-12-22 14:37:58	61	40
34	100000000197	200000000295	1A	2018-01-31 16:57:46.713000	Mineral Wadding	NV.157.10.2	145	2017-12-22 12:54:32	67	46
35	100000000197	200000000291	2B	2018-01-31 17:03:02.147000	Mineral Wadding	NV.157.10.2	155	2017-12-22 10:21:46	65	44
36	100000000197	200000000352	1B	2018-01-31 17:21:59.933000	Mineral Wadding	NV.157.10.2	135	2018-01-12 10:25:57	55	34
37	100000000197	200000000351	1A	2018-01-31 17:25:44.200000	Mineral Wadding	NV.157.10.2	135	2018-01-11 14:03:37	55	34
38	100000000197	200000000353	1C	2018-01-31 17:30:29.710000	Mineral Wadding	NV.157.10.2	135	2018-01-15 08:47:56	76	55
39	100000000197	200000000328	2A	2018-01-31 17:33:50.030000	Mineral Wadding	NV.157.10.2	145	2018-01-04 08:02:33	59	38

Стереть текст

Скопировать текст в буфер обмена

Выход

## MST7.2 Cement Matrix Evaluator.

“MST7.2 Cement Matrix Evaluator” connects to SQL data base, takes and analyses data, shows the result at the screen.

The main purpose is to calculate maximum amount of bulk radioactive waste that can be added to a container and cement mass to be added (minimum cement mass when fully loaded with radioactive waste and maximum cement mass when bulk radioactive waste not added).

The information can be obtained for a current (that is being loaded with radioactive waste) or custom (with entered container number) container.

Interface language can be chosen.

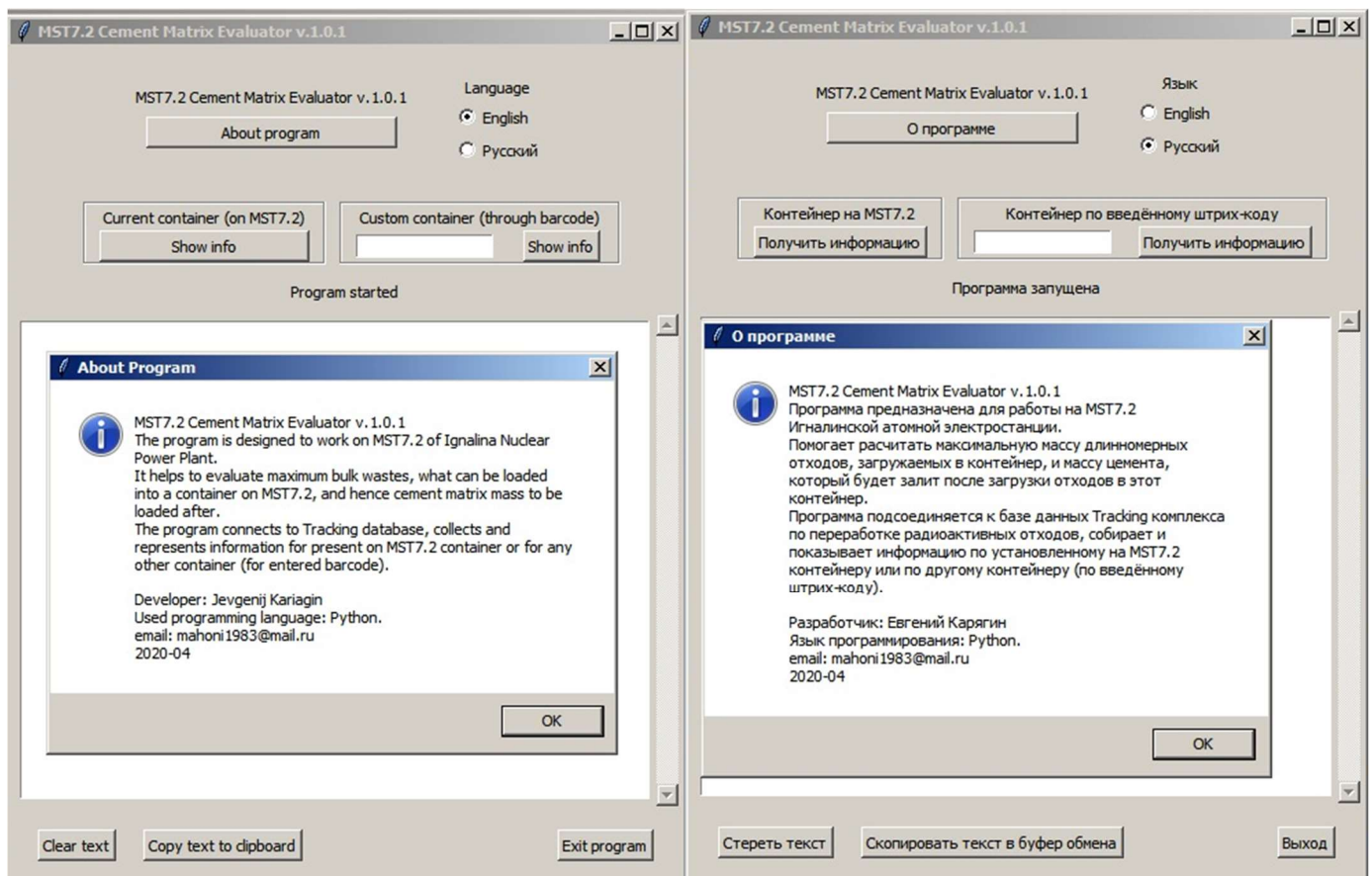
Information window can be opened by pressing “About program” button.

Obtained information can be copied to a clip board and cleared from the program window.

Singleton design pattern is implemented.

Programming language: Python

Release: 2020





MST7.2 Cement Matrix Evaluator v.1.0.1

Language  
☒ English  
☐ Русский

About program

Current container (on MST7.2)  
 Show info

Custom container (through barcode)  
 100000000196 Show info

Connected to Tracking database successfully

entered barcode: 100000000196

2020-06-15 14:24:57  
 1. Container Nr.: 100000000196  
 2. Drums loaded count: 46  
 3. Drums height (mm): 6741  
 4. Drums mass (kg): 3117.0  
 5. Drums volume (m3): 1.84  
 6. Drums density (g/cm3): 1.69  
 7. Concrete volume without bulk (m3): 1.76  
 8. Concrete mass without bulk (kg): 3338  
 9. Mass drums and concrete without bulk (kg): 6455  
 10. Density drums and concrete without bulk(g/cm3): 1.79  
 11. Total container mass without bulk(kg): 13405  
 12. Maximum steel bulk volume to add (m3): 0.27  
 13. Maximum steel bulk mass to add kg: 2104  
 14. Minimum concrete mass if bulk added (kg): 2829  
 15. Total alpha activity (Bq): 154244  
 16. Total beta activity (Bq): 5044423995  
 17. Total gamma activity (Bq): 1980933591  
 18. Used container mass brutto (kg): 6950  
 19. Used concrete density (g/cm3): 1.9

Clear text Copy text to clipboard Exit program

MST7.2 Cement Matrix Evaluator v.1.0.1

Язык  
☐ English  
☒ Русский

О программе

Контейнер на MST7.2  
 Получить информацию

Контейнер по введённому штрих-коду  
 100000000196 Получить информацию

Соединение с базой данных Tracking установлено успешно

Введён штрих-код: 100000000196

2020-06-15 14:25:43  
 1. Номер контейнера: 100000000196  
 2. Количество загруженных бочек: 46  
 3. Высота бочек (мм): 6741  
 4. Масса бочек (кг): 3117.0  
 5. Объём бочек (м3): 1.84  
 6. Плотность бочек (г/см3): 1.69  
 7. Объём цемента без длинномеров (м3): 1.76  
 8. Масса цемента без длинномеров (кг): 3338  
 9. Масса цемента и бочек без длинномеров (кг): 6455  
 10. Плотность бочек и цемента без длинномеров (г/см3): 1.79  
 11. Полная масса контейнера без длинномеров (кг): 13405  
 12. Максимальный объём стальных длинномеров к догрузке (м3): 0.27  
 13. Максимальная масса стальных длинномеров к догрузке (кг): 2104  
 14. Минимальная масса цемента при догрузке стальных длинномеров (кг): 2829  
 15. Сумма альфа активностей (Бк): 154244  
 16. Сумма бета активностей (Бк): 5044423995  
 17. Сумма гамма активностей (Бк): 1980933591  
 18. Масса пустого контейнера для расчётов (кг): 6950  
 19. Плотность цемента для расчётов (г/см3): 1.9

Стереть текст Скопировать текст в буфер обмена Выход



## Timer

A simple countdown timer that can be useful for laboratory with multiple spectrometers.

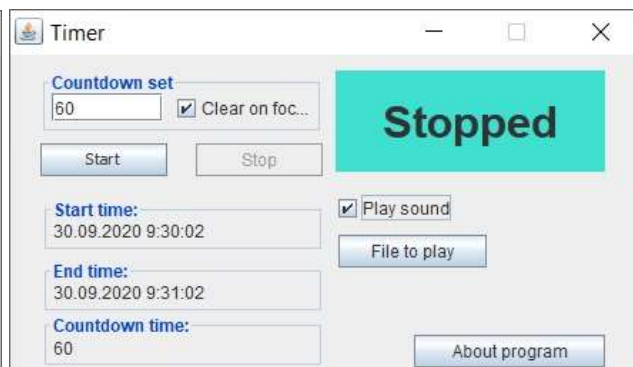
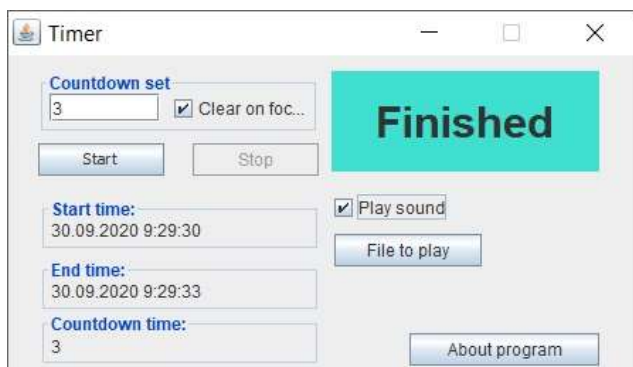
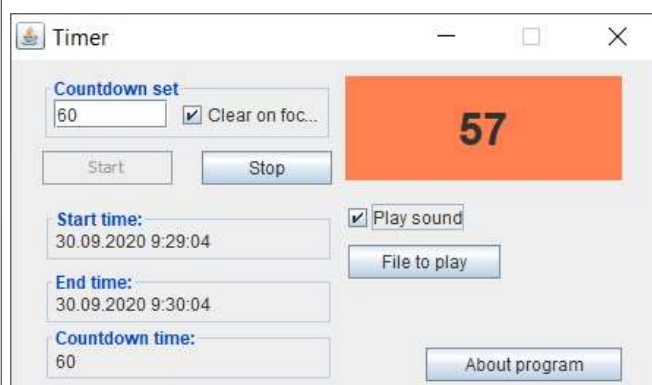
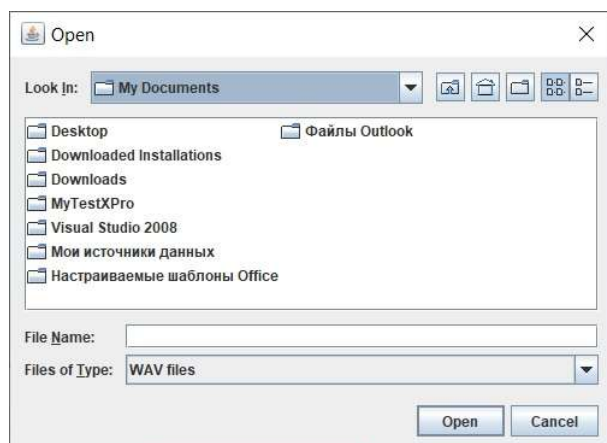
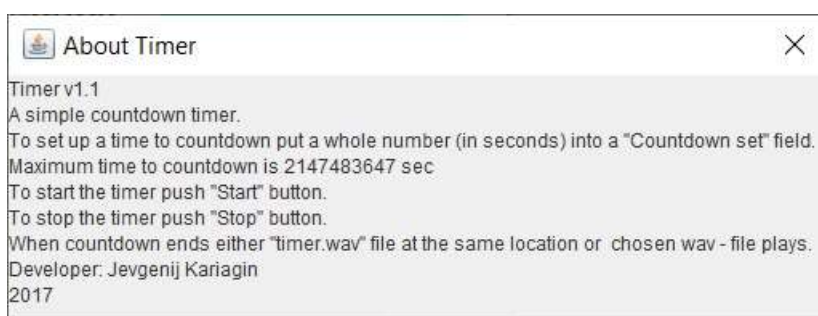
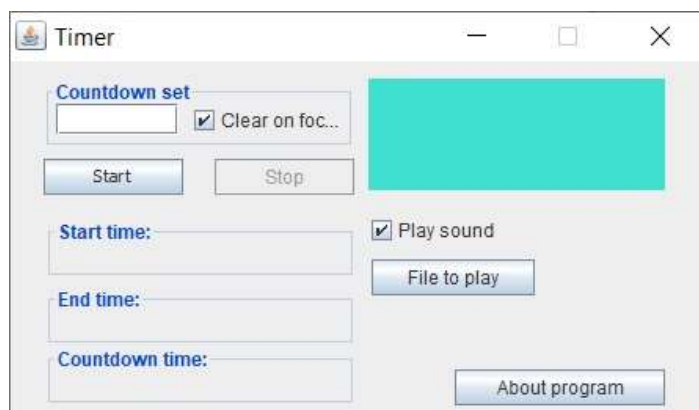
Countdown time in seconds is to be set. Start and end time are shown at the window.

Windows default or chosen wav-file can be played on finish.

Information window can be opened by pressing “About program” button.

Programming language: Java

Release: 2017



## Nuclide vector information of MST programs

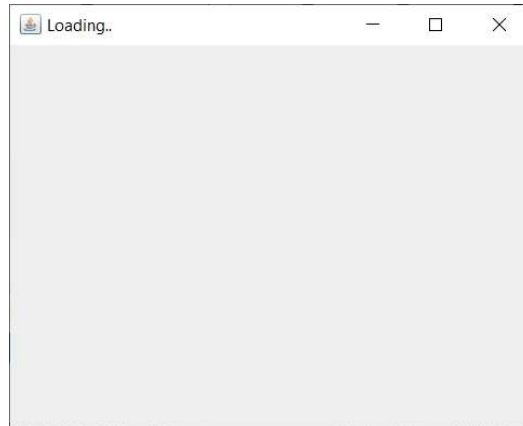
“Nuclide vector information of MST programs” opens (predefined in ini-file) txt-file, two mdb-files gathered and shows information: current nuclide library, measured nuclides and used nuclide vector.

Information window can be opened by pressing “About program” button.

Singleton design pattern is implemented.

Programming language: Java

Release: 2017



Nuclide vector information of MST programs

Nuclide Vector: NV-157-2      Nuclide Vector Date: 2017-09-01      Refresh      About

No	Nuclide	Reference Nuclide	Ratio
1	Ag110m	Co60	4.24065E-7
2	Am241	Co60	3.1220166E-5
3	C14	Co60	0.14849477
4	Cl36	Co60	0.0077557582
5	Cm244	Co60	1.0106597E-5
6	Cs134	Co60	0.0032228427
7	Cs135	Co60	1.4219144E-6
8	Cs137	Co60	0.34226632
9	Fe55	Co60	4.352801
10	I129	Co60	2.0359275E-7
11	Mn54	Co60	1.8710422E-4
12	Nb93m	Co60	0.16927649
13	Nb94	Co60	0.032306477
14	Ni59	Co60	0.004523912
15	Ni63	Co60	0.5164711
16	Np237	Co60	6.140083E-9
17	Pu238	Co60	3.0117697E-5
18	Pu239	Co60	1.5507861E-5
19	Pu240	Co60	2.6474452E-5
20	Pu241	Co60	0.0016828377
21	Sr90	Co60	0.001903028
22	Tc99	Co60	7.755692E-6
23	U234	Co60	9.694651E-8
24	U235	Co60	1.9389792E-9
25	U238	Co60	3.037734E-8
26	Zn65	Co60	3.744475E-6
27	Zr93	Co60	1.9066552E-4

Nuclide Library: inppcocs.lib      Measured Nuclides: Co60, Cs137, Eu152      Last refreshed: 30.09.2020 9:37:24

## Nuclide vector information of MST programs



### Nuclide vector information of MST programs v1.0

The program is to work with Monitoring Stations (MST) of Ignalina Nuclear Power Plant.

It gets and shows short information about current nuclide vector and measuring nuclides.

The program gets paths for MST files from "Nuclide vector information of MST programs.ini" in the same folder.

Lines for paths must start with:

LSC.ini location:

MST\_iniparam.mdb location:

LSC\_.mdb location:

Example:

LSC.ini location: c:\Program Files\LSC\LSC.ini

Case not sensitive. All other lines are ignored. The order is not important.

The program reads the files to get information about nuclide vector and measuring nuclides then shows in appropriate fields.

The files are read on the original paths again upon refresh button.

Jevgenij Kariagin

2017

OK

### MST1.6Info.

“MST1.6Info” connects to SQL database, takes and analyses data, shows the result at the screen:

- Current 6m length container is being loaded with radioactive waste;
- Measured and loaded transport containers;
- Current transport container with radioactive waste after measurement.

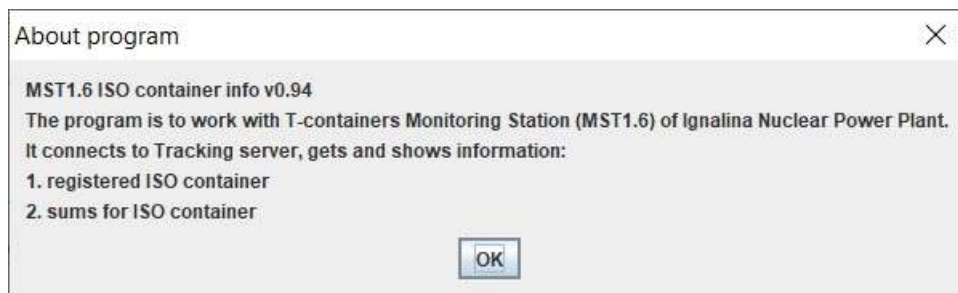
Last measured transport container with radioactive waste can be removed from SQL database to perform a new measurement.

Information window can be opened by pressing “About program” button.

Singleton design pattern is implemented.

Programming language: Java

Release: 2017



MST1.6 ISO container info v0.94

Current ISO container

4.B201.0001499

Registered	Total mass, kg	Density, g/cm3	Alpha activity	Beta activity	Gamma activity
-	6783.0	0.45099735	1948.3193	3.1339906E7	1.5817998E7

Loaded T-containers

Number	Loaded	Mass, kg	DR mean, uSv/h	Alpha activity, Bq/kg	Beta activity, Bq/kg	Gamma activity, Bq/kg	Density, g/cm3	Operator
1	2021-08-13 11:07:...	166	1.3E-4	5.969088	96463.02	48561.24	0.17659575	Podluznyj
2	2021-08-13 12:29:...	1040	4.4E-4	135.74779	2193742.5	1104369.8	1.106383	Podluznyj
3	2021-08-13 13:28:...	260	7.2E-4	48.14898	778108.2	391713.78	0.27659574	Podluznyj
4	2021-08-16 13:43:...	781	0.00182	124.28141	2005308.9	1010389.25	0.8308511	Rinkeviciene
5	2021-08-17 09:22:...	367	2.3E-4	41.708595	672627.75	339006.75	0.39042553	Rinkeviciene
6	2021-08-17 11:11:...	175	1.3E-4	22.834011	368240.4	185594.45	0.1861702	Rinkeviciene
7	2021-08-18 10:22:...	214	2.8E-4	20.985792	338258.53	170533.0	0.22765957	Rinkeviciene
8	2021-08-18 14:11:...	194	2.5E-4	27.158817	437758.16	220695.73	0.20638297	Rinkeviciene
9	2021-08-19 13:34:...	906	0.00114	306.08743	4931092.5	2486731.2	0.9638298	Rinkeviciene
10	2021-08-20 09:38:...	227	2.9E-4	28.76588	463179.75	233647.6	0.24148937	Rinkeviciene
11	2021-08-23 13:33:...	262	3.3E-4	41.0764	660369.94	333408.72	0.27872342	Rinkeviciene
12	2021-08-24 09:29:...	190	8.7E-4	42.07402	676057.06	341427.84	0.20212767	Rinkeviciene
13	2021-08-25 09:41:...	788	0.00341	637.9893	1.0246068E7	5176052.5	0.83829784	Rinkeviciene
14	2021-08-25 13:22:...	199	0.00158	28.999113	465723.88	235271.84	0.21170212	Rinkeviciene
15	2021-08-26 09:37:...	886	0.00161	431.89053	6932533.5	3503154.5	0.94255316	Rinkeviciene

Current T-container

Date, time	Mass, kg	Density, g/cm3	Alpha activity, Bq/kg	Beta activity, Bq/kg	Gamma activity, Bq/kg	Operator
2021-08-30 10:36:34.0	241	0.25638297	113.65006	1820481.8	920993.9	Rinkeviciene

Remove current T-container

Last refreshed

Aug 30, 2021 2:06:42 PM

Refresh

About



## MST6DrumInfo.

“MST6DrumInfo” connects to SQL database, takes and shows data at the screen:

- Current drum with radioactive waste that is on measurement;
- Drums with radioactive waste in the queue for measurement.

Information window can be opened by pressing “About program” button.

Singleton design pattern is implemented.

Programming language: Java

Release: 2018

The screenshot shows the main window of the 'MST6 Drums info v1.00' application. It features a title bar with the application name and standard window controls. The main content area is divided into two sections. The top section, titled 'Current drum (on MST6)', contains three input fields labeled 'ID', 'Nuclide vector', and 'Waste'. The bottom section, titled 'Next drums to MST6', contains a table with three columns: 'ID', 'Nuclide Vector', and 'Waste'. The table has one row of data: '200000000765', 'NV.157.10.2', and 'Filter'. Below the table, there is a 'Last refreshed' label with a text box showing '2020-09-25, 10:37:43'. At the bottom right, there are two buttons: 'Refresh' and 'About'.

ID	Nuclide Vector	Waste
200000000765	NV.157.10.2	Filter

The screenshot shows the 'About program' dialog box. It has a title bar with the text 'About program'. The main text area contains the following information: 'MST6 Drums info v1.00', 'The program is to work with Drums Monitoring Station (MST6) of Ignalina Nuclear Power Plant. It connects to Tracking server, gets and shows information:', a list of two items: '1. current drum (present on MST6)' and '2. next drums for MST6.', 'Developer: Jevgenij Kariagin', and '2018'. At the bottom center, there is an 'OK' button.

This screenshot shows the same 'MST6 Drums info v1.00' application window as the first one, but with the 'Next drums to MST6' section empty. The 'Current drum (on MST6)' section and the 'Last refreshed' text box remain the same. The 'Refresh' and 'About' buttons are still present at the bottom right.

## Spectrometry measurements data base

### “База данных спектрометрических измерений”

A program is to work with spectrometry measurement results data base (adding, reading). It also helps to perform measurements choosing from predefined options.

The program reads object list (to be measured) from Excel-file, puts information to relevant fields. A user chooses a right object taking into an account important fields or adds /changes information.

After choosing the right object for measurement a user enters laboratory measurement number and the program inputs this information to a data base.

The program forms current measurement short description and copies it into a clip board.

After measurement finish the program opens and parses the spectrometry measurement file by its number and transfer information to the data base. All possible nuclides automatically are being detected in results, no need to list them.

A short protocol with important data in appropriate format can be formed in predefined in settings Word-file by the program.


Information window can be opened by pressing “About program” button.

Programming language: Microsoft Visual Basic for Applications

Release: 2012

The screenshot shows the main window of the 'База данных спектрометрических измерений' (Spectrometry Measurements Database) application. The window has a title bar with the application name and standard Windows window controls. The interface is organized into several sections:

- Тип измерения:** A group box containing three radio buttons: ☒ Мониторинг, ☐ Внеплановое, and ☐ По программе. To the right of these is a button labeled 'О программе'.
- Тип Мониторинга:** A group box containing three radio buttons: ☒ Ежедневный, ☐ Еженедельный, and ☐ Периодический.
- Номер программы:** A dropdown menu.
- Номер измерения:** A dropdown menu.
- Номер пробы:** A text input field.
- Наименование:** A dropdown menu with the text 'Наименование' visible.
- Здание:** A dropdown menu with 'Здание' visible.
- Помещение:** A dropdown menu with 'Помещение' visible.
- Отметка:** A dropdown menu with 'Отметка' visible.
- Маркировка:** A dropdown menu with 'Маркировка' visible.
- Дополнительная информация:** A text input field.
- Строка-результат:** A text area containing the text '№ Наименование'.
- Buttons at the bottom:** Three buttons are arranged horizontally: 'Скопировать строку в буфер и занести данные пробы в таблицу', 'Внести результаты измерения в таблицу', and 'Сделать вырезку из отчёта измерения'.

 База данных спектрометрических измерений

Тип измерения:

☐ Мониторинг    ☐ Внеплановое    ☒ По программе

О программе

Тип Мониторинга:

☒ Ежедневный  
☐ Еженедельный  
☐ Периодический

Номер программы:

Номер измерения:

Номер пробы:  Наименование:


Здание:  Помещение:  Отметка:

Маркировка:  Дополнительная информация:

Строка-результат:

№ Наименование. Здание. п. Помещение. Маркировка.

Скопировать строку в буфер и занести данные пробы в таблицу    Внести результаты измерения в таблицу    Сделать вырезку из отчёта измерения

 О программе

Описание программы.

Программа разработана для создания базы данных спектрометрических измерений.

Функции программы:

- внесение информации о пробах и результатах спектрометрических измерений проб в базу данных;
- формирование краткой информации об измерениях проб.

При запуске программа открывает файл с настройками ("База данных спектрометрических измерений.xls"), находящийся в той директории, что и файл программы. В файле должны быть листы с названиями: "путь к файлам", "ежедневный", "еженедельный", "периодический", "внеплановое", "по программе".

Ячейки листа "путь к файлам" задают пути:

- "B1"-к файлу Excel-таблицы, в которую будут заноситься данные по измерениям.
- "B2"-к директории, в которой программа будет искать файлы-отчёты спектрометрических измерений (\*.rpt и \*.txt -файлы).
- "B3"-к Word-файлу, в который будут записываться вырезки результатов измерений.

Столбцы листов "ежедневный", "еженедельный", "периодический", "внеплановое" должны содержать варианты отбора проб:

- "A"-наименование, "B"-здание, "C"-помещение, "D"-отметка, "E"-маркировка.

Столбцы листа "по программе" должны содержать варианты отбора проб:

- "A"-номер программы, "B"-номер измерения, "C"-наименование, "D"-здание, "E"-помещение, "F"-отметка, "G"-маркировка.

При нажатии на кнопку "Скопировать строку в буфер и занести данные пробы в таблицу" в буфер обмена заносится запись из поля "Строка-результат" и данные по пробе заносятся в Excel-таблицу (с возможностью перезаписи внесённых ранее данных с таким же номером пробы).

При нажатии на кнопку "Внести результаты измерения в таблицу" в Excel-таблицу заносится результат измерения пробы. Программа по номеру пробы открывает файл с именем номера пробы и расширением ".rpt" (файл, созданный спектрометрическим комплексом Orltec), если не обнаружен - то с расширением ".txt" (файл, созданный спектрометрическим комплексом Canberra).

При нажатии на кнопку "Сделать вырезку из отчёта измерения" в конец Word-файла для вырезок измерений добавляется вырезка по измерению пробы по вписанному номеру пробы. Данные для вырезки берутся из Excel-таблицы. Затем, Word-файл становится активным.

Идея создания программы: Андрей Юдин.  
Разработчик программы: Евгений Карягин.  
Тестирование программы: Андрей Юдин.

База данных спектрометрических измерений, v.1.1.10.  
ИАЭС.  
2012 год.

[illegible]



## Nuclide activities inserting into a table

### “Вставка активностей в таблицу”

The program inserts spectrometry measurement results into an opened Excel file.

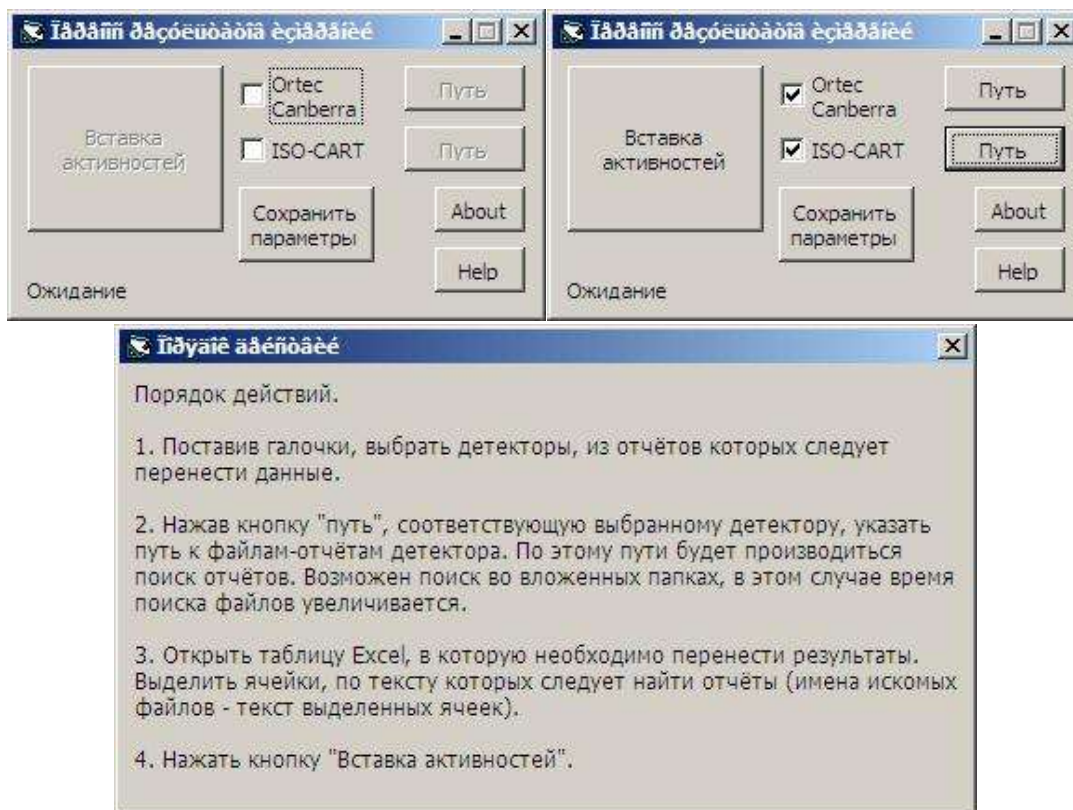
It reads measurement number list in selected cells of opened Excel workbook, reads files with spectrometry results, parses the information and puts results into the active spreadsheet.

The program reads column names in the active spreadsheet to detect relevant to puts parsed data into. It adds new columns next to the last one if needed column doesn't exist in the active spreadsheet (e.g. new nuclide has appeared in results that isn't listed in columns).

The program highlights cells with inserted data and new columns added.

Programming language: Microsoft Visual Basic for Applications

Release: 2012



Программа разработана для автоматизации переноса результатов спектрометрических измерений (стационарных приборов ORTEC, Canberra и переносного прибора ISO-CART) в таблицу программы Microsoft Excel.

#### Принцип работы:

1. В активном листе Excel программа в первой строке ищет ячейки с названиями нуклидов (критерий поиска: "б-ц", "б-цц", "б-ццт", "б-цц+", "б-ццц", "б-цццт", "б-ццц+", "бб-цц", "бб-ццт", "бб-цц+", "бб-ццц", "бб-цццт", "бб-ццц+", где "б"-любая латинская буква, "ц"-любая цифра, "т"-латинская буква эм, "+"-символ плюса, регистр не учитывается). В эти столбцы будут вписываться найденные значения активностей. Также производится поиск ячеек со строками "Дата измерения" и "Измерение выполнил". Если такие ячейки не обнаружены, то добавляются новые столбцы с такими строками. В эти столбцы из фалов-отчётов будут вписываться даты измерения и фамилия выполнвшего измерение.
2. По выбранным детекторам ищет файлы-отчёты в указанных пользователем путях поиска. Имена искомых файлов определяются по тексту выбранных ячеек. Для стационарного прибора ORTEC расширение файлов принимается RPT, для Canberra - TXT, для переносного прибора ISO-CART - расширение DOC.
3. В найденных файлах ищет строки, начинающиеся с обозначений нуклидов (критерий поиска такой же как и в п. 1), переносит значения активности и погрешности в таблицу в соответствующие номеру пробы и нуклиду ячейки. Если погрешность измерения активности нуклида не представлена, то значение МДА нуклида в таблицу вписывается с точностью до сотых с начальным символом "<".
4. Если в файле-отчёте обнаружен нуклид, которого нет в таблице Excel, в таблицу после последних столбцов с названием нуклида и его погрешностью добавляются два новых столбца (один - с названием нуклида, другой - с надписью о неопределённости).
5. Вставленные в таблицу значения активности и погрешности выделяются жёлтым фоном ячеек. В случае ненахождения файла ячейка, по тексту которой производился поиск, выделяется бирюзовым фоном. Пустые ячейки пропускаются.

Перенос результатов измерений v.1.1.8

Разработчик: Евгений Карягин

ИАЭС, 2012, 2017 годы

Используемый путь:

Новый путь:

☐ Включить вложенные папки в поиск

Изменить путь

Отмена

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## Protocols from spreadsheet creation

### “Создание отчётов из таблицы”

The program creates protocols by Word-file template taking data from Excel-file spreadsheet. It is convenient to use when a lot of protocols (tens, hundreds) are needed to be formed by data in Excel – file.

Firstly, the program must be setting up by showing which columns in active Excel spreadsheet to take data from and which place (bookmark) in active Word file (template) to put the data into. I.e. the program getting know the columns to take data from (Excel-file) and places to put data to (Word-file).

Word file with created reports is being formed by selected rows in active Excel-spreadsheet.

Programming language: Microsoft Visual Basic for Applications

Release: 2012

