

Working Instruction: semi-automated REM sleep analysis

Preparation I.

1. Create a Folder with name / acronym of subject (i.e. RBD0001)

→ in the end you will have 4 files

- EDF Data
- Flow Events
- Classification Arousals
- Sleep profile

Name	Typ
Classification Arousals - DN76	Textdokument
DN_76_EmgExport.edf	EDF-Datei
Flow Events - DN76	Textdokument
Sleep profile - DN76	Textdokument

Preparation II.

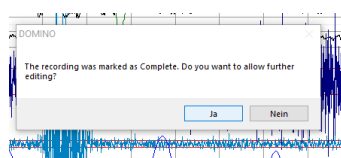
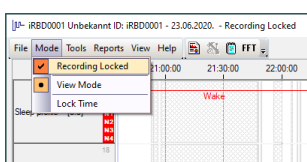
1. Open DOMINO Software → Analysis → open the PSG you want to analyse



Index	Subject	Study	Session	Start	End	Duration	Size	Format	Analysis	Comments	File Name
1	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
2	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
3	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
4	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
5	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
6	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
7	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
8	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
9	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
10	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
11	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
12	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
13	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
14	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
15	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
16	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
17	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
18	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
19	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf
20	DN76	Flow	Flow	20.05.2020 21:00:00	20.05.2020 22:00:00	01:00:00	11.76 MB	EDF	✓		Flow_76.edf

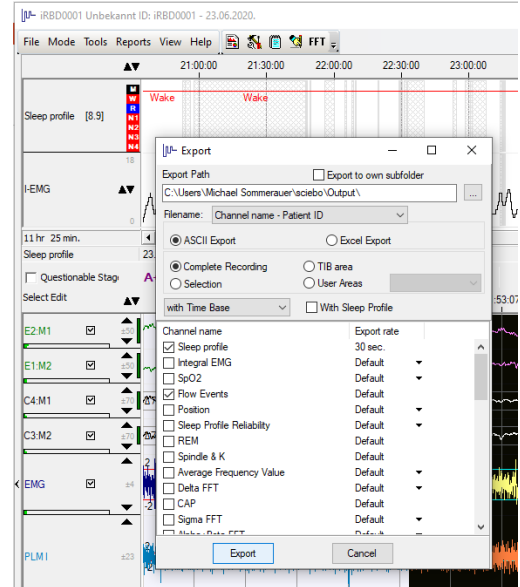
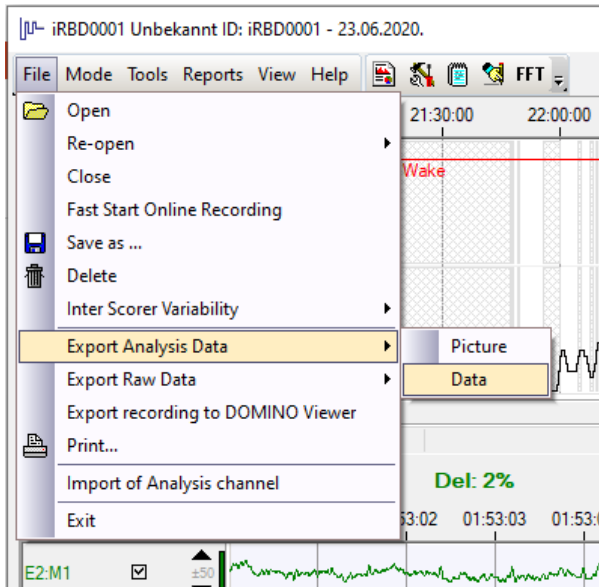
If PSG is locked:

2. Mode → Recording Locked → unlock

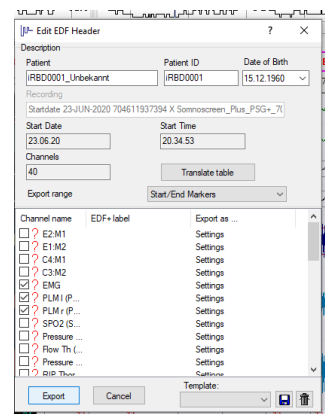
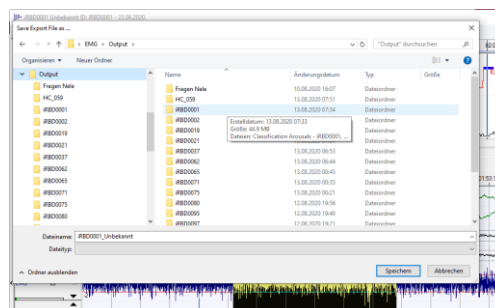
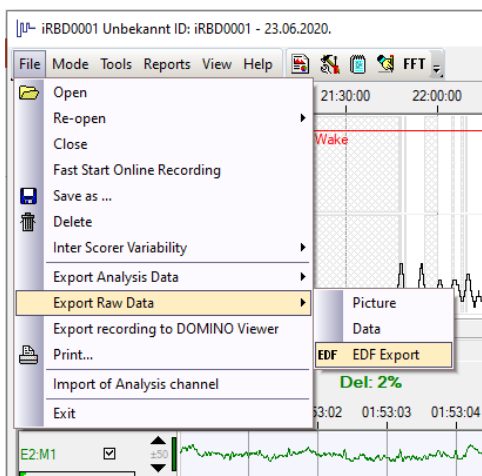


Save data

- File → export analyzing data → data → sleep profile / flow events / classification Arousals → Export and save to the folder you created




- File → export raw data → EDF export → save to the folder you created → choose the data you want to save (at least all EMG channels you want to analyze) → export



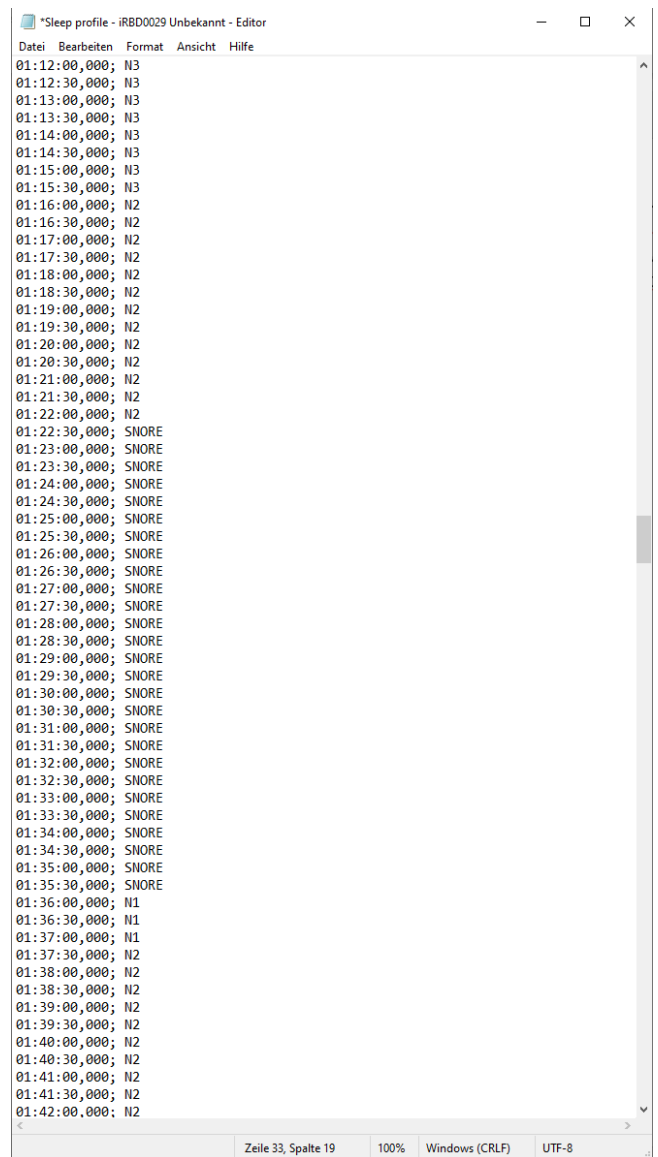
Elimination of snoring artifacts on chin EMG:

- Snoring artifacts can be marked in the sleep profile:
- 1st you have to look trough the PSG data to find the epochs of snoring artifacts on the chin EMG, 2nd you manually change the sleep profile you saved before
- Open sleep profile → change „REM“ to snore for all 30s epochs corrupted by snoring artifacts → save modified sleep profile with addition of „SNORE“ to the file name



Screenshot of a sleep profile editor window titled "Sleep profile - iRBD0029 Unbekannt - Editor". The window shows a list of epochs with their corresponding sleep stages. The stages are: N3, N2, REM, and N1. A large blue arrow points from the 'REM' stages in this window to the right window.

Time	Stage
01:13:30,000	N3
01:14:00,000	N3
01:14:30,000	N3
01:15:00,000	N3
01:15:30,000	N3
01:16:00,000	N2
01:16:30,000	N2
01:17:00,000	N2
01:17:30,000	N2
01:18:00,000	N2
01:18:30,000	N2
01:19:00,000	N2
01:19:30,000	N2
01:20:00,000	N2
01:20:30,000	N2
01:21:00,000	N2
01:21:30,000	N2
01:22:00,000	N2
01:22:30,000	REM
01:23:00,000	REM
01:23:30,000	REM
01:24:00,000	REM
01:24:30,000	REM
01:25:00,000	REM
01:25:30,000	REM
01:26:00,000	REM
01:26:30,000	REM
01:27:00,000	REM
01:27:30,000	REM
01:28:00,000	REM
01:28:30,000	REM
01:29:00,000	REM
01:29:30,000	REM
01:30:00,000	REM
01:30:30,000	REM
01:31:00,000	REM
01:31:30,000	REM
01:32:00,000	REM
01:32:30,000	REM
01:33:00,000	REM
01:33:30,000	REM
01:34:00,000	REM
01:34:30,000	REM
01:35:00,000	REM
01:35:30,000	REM
01:36:00,000	N1
01:36:30,000	N1
01:37:00,000	N1
01:37:30,000	N2
01:38:00,000	N2
01:38:30,000	N2
01:39:00,000	N2
01:39:30,000	N2
01:40:00,000	N2
01:40:30,000	N2
01:41:00,000	N2
01:41:30,000	N2
01:42:00,000	N2
01:42:30,000	N2
01:43:00,000	N2
01:43:30,000	N2



Screenshot of a sleep profile editor window titled "Sleep profile - iRBD0029 Unbekannt - Editor". The window shows the same list of epochs as the left window, but with 'REM' stages changed to 'SNORE'.

Time	Stage
01:12:00,000	N3
01:12:30,000	N3
01:13:00,000	N3
01:13:30,000	N3
01:14:00,000	N3
01:14:30,000	N3
01:15:00,000	N3
01:15:30,000	N3
01:16:00,000	N2
01:16:30,000	N2
01:17:00,000	N2
01:17:30,000	N2
01:18:00,000	N2
01:18:30,000	N2
01:19:00,000	N2
01:19:30,000	N2
01:20:00,000	N2
01:20:30,000	N2
01:21:00,000	N2
01:21:30,000	N2
01:22:00,000	N2
01:22:30,000	SNORE
01:23:00,000	SNORE
01:23:30,000	SNORE
01:24:00,000	SNORE
01:24:30,000	SNORE
01:25:00,000	SNORE
01:25:30,000	SNORE
01:26:00,000	SNORE
01:26:30,000	SNORE
01:27:00,000	SNORE
01:27:30,000	SNORE
01:28:00,000	SNORE
01:28:30,000	SNORE
01:29:00,000	SNORE
01:29:30,000	SNORE
01:30:00,000	SNORE
01:30:30,000	SNORE
01:31:00,000	SNORE
01:31:30,000	SNORE
01:32:00,000	SNORE
01:32:30,000	SNORE
01:33:00,000	SNORE
01:33:30,000	SNORE
01:34:00,000	SNORE
01:34:30,000	SNORE
01:35:00,000	SNORE
01:35:30,000	SNORE
01:36:00,000	N1
01:36:30,000	N1
01:37:00,000	N1
01:37:30,000	N2
01:38:00,000	N2
01:38:30,000	N2
01:39:00,000	N2
01:39:30,000	N2
01:40:00,000	N2
01:40:30,000	N2
01:41:00,000	N2
01:41:30,000	N2
01:42:00,000	N2

If you mark REM to SNORE, RBDtector will discard these epochs from chin EMG analysis, but keeps all other EMG channels for analysis. Be aware to not change NREM epochs to SNORE as RBDtector will handle them as REM sleep