Supplementary material for Hansen CR, et al. Comparison of three immobilisation systems for radiation therapy in head and neck cancer. Acta Oncol 2014;53:424–7.

Supplementary Figure 1. The temporal evaluation of the random translational errors in the three directions measured in mm.

Supplementary Figure 2. The temporal evaluation of the random rotational errors in the three axes measured in degrees.

Supplementary Table I. Overview of reported head and neck translational setup uncertainties. All units given in mm.

Author	Year	Imaging	Region	$\sigma_{\text{translation}}$			$\Sigma_{\text{translation}}$		
				Lat.	Long.	Vert.	Lat.	Long.	Vert.
Humphreys et al. [4]	2005	EPID	H&N	0.4	0.6	0.7	1.0	0.9	1.1
Zhang et al. [6]	2006	Inroom CT	C2 with mouthpiece	1.3	1.5	1.1	1.9	1.1	2.0
			C6 with mouthpiece	1.9	1.9	1.9	2.4	1.7	2.4
			C2 without mouthpiece	1.6	1.8	1.9	2.9	1.9	2.2
			C6 without mouthpiece	2.3	2.3	1.9	3.6	2.2	2.6
Van Kranen et al. [9]	2009	Interval CBCT*	H&N	1.4	1.4	1.5	1.2	1.1	1.2
			Vertebra C1–C3	1.5	1.4	1.5	1.5	1.1	1.3
			Vertebra C3–C5	1.7	1.6	1.8	1.6	1.2	1.4
			Vertebra C5–C7	1.9	2.0	2.0	1.8	1.6	1.9
			Vertebra caudal C7	2.3	2.1	1.9	2.7	1.9	2.1
Velec et al. [10]	2010	Daily CBCT	H&N System SM	1.5	1.5	1.6	0.8	1.0	1.0
			H&N System SSM	1.3	2.0	1.6	0.8	1.1	0.8
Den et al. [18]	2010	Daily CBCT	H&N	1.5	2.0	1.9	1.1	1.1	1.4
Giske et al. [22]	2011	Inroom CT	H&N	0.7	1.1	1.2	1.0	1.3	1.1
			C1–C2	0.6	1.2	0.9	0.7	1.5	0.8
			C6	1.6	1.3	2.9	2.4	1.6	2.6
Average				1.5	1.6	1.6	1.7	1.4	1.6
Hansen et al.	2013	Daily CBCT	C1–C6 System A	0.9	1.0	1.3	1.2	1.0	1.9
			C1–C6 System B	1.7	2.4	2.1	1.1	2.4	2.6
			C1–C6 System C	1.4	1.2	1.8	1.3	1.9	2.5

*residual setup errors after corrections by offline shrinking action level protocol.

Supplementary Table II. Overview of reported head and neck rotational setup uncertainties. All units given in degrees.

Author	Year	Imaging	Region	$\sigma_{\text{translation}}$			$\Sigma_{\text{translation}}$		
				Lat.	Long.	Vert.	Lat.	Long.	Vert.
Humphreys et al. [4]	2005	EPID	H&N	0.3	-	0.2	0.5	-	0.4
Zhang et al. [6]	2006	Inroom CT	H&N	2.0	1.4	1.0	-	-	-
Kranen et al. [9]	2009	Interval CBCT*	H&N	0.6	0.7	0.7	0.8	0.8	0.8
			Vertebra C1–C3	1.3	1.1	1.0	1.3	1.1	1.1
			Vertebra C3–C5	1.1	1.3	1.0	1.2	1.4	1.4
			Vertebra C5–C7	1.3	1.0	1.0	1.4	1.0	1.2
			Vertebra caudal C7	1.1	1.0	0.8	1.2	1.1	0.8
Velec et al. [10]	2010	Daily CBCT	H&N System SM	0.9	1.1	0.9	0.9	1.4	0.9
			H&N System SSM	0.8	0.8	0.8	0.8	0.6	0.9
Giske et al. [22]	2011	Inroom CT	H&N	0.6	0.5	0.4	0.7	0.7	0.5
			C1–C2	0.6	0.6	0.4	0.6	0.8	0.5
			C6	1.1	1.1	0.6	1.1	1.0	0.6
Average				1.0	1.0	0.7	1.0	1.0	0.8
Hansen et al.	2013	Daily CBCT	C1–C6 System A	0.7	0.8	0.5	0.6	1.0	0.5
			C1–C6 System B	1.2	1.1	1.3	1.0	1.3	1.1
			C1–C6 System C	1.1	1.0	0.8	1.3	1.0	0.6

*residual setup errors after corrections by the offline shrinking action level protocol.