

Checklist from (Poldrack et al. 2008)	NIDM-Results representation	Example (turtle)
Intra-subject fMRI modeling info		
<u>Estimation method</u>	Attribute nidm:'with Estimation Method' of the nidm:'Model Parameters Estimation' activity. Possible values include: • obo:'ordinary least squares estimation' for ordinary least squares, • obo:'generalized least squares estimation' for generalized least squares or; • obo:'weighted least squares estimation' for weighted least squares.	EXAMPLE: Ordinary Least Squares Estimation <pre> @prefix nidm_ModelParametersEstimation: <http://purl.org/nidash/nidm#NIDM_0000056> . @prefix nidm_withEstimationMethod: <http://purl.org/nidash/nidm#NIDM_0000134> . @prefix obo_ordinaryleastsquaresestimation: <http://purl.obolibrary.org/obo/STATO_0000370> . . niiri:model_pe_id prov:used niiri:error_model_id ; a prov:Activity , nidm_ModelParametersEstimation ; rdfs:label "Model parameters estimation" ; nidm_withEstimationMethod: obo_ordinaryleastsquaresestimation: . </pre>
<u>Hemodynamic response function</u>	Attribute 'has HRF Basis' of a 'Design Matrix' entity. Possible values include: • spm:'SPM's Canonical HRF' for SPM's canonical hemodynamic response function (default in SPM). • fsl:'FSL's Gamma Difference HRF' for FSL's • nidm:'Finite Impulse Response Basis Set'	EXAMPLE: HRF: SPM's Informed Basis Set <pre> @prefix nidm_DesignMatrix: <http://purl.org/nidash/nidm#NIDM_0000019> . @prefix nidm_regressorNames: <http://purl.org/nidash/nidm#NIDM_0000021> . @prefix nidm_hasHRFBasis: <http://purl.org/nidash/nidm#NIDM_0000102> . @prefix nidm_hasDriftModel: <http://purl.org/nidash/nidm#NIDM_0000088> . @prefix spm_SPMSCanonicalHRF: <http://purl.org/nidash/spm#SPM_0000004> . @prefix spm_SPMSTemporalDerivative: <http://purl.org/nidash/spm#SPM_0000006> . @prefix spm_SPMSDispersionDerivative: <http://purl.org/nidash/spm#SPM_0000003> . . niiri:first_level_design_matrix_id a prov:Entity , nidm_DesignMatrix ; rdfs:label "First-Level Design Matrix" ; prov:atLocation "DesignMatrix.csv"^^xsd:anyURI ; dct:format "text/csv"^^xsd:string ; nfo:fileName "DesignMatrix.csv"^^xsd:string ; dc:description niiri:design_matrix_png_id ; nidm_regressorNames: "[\Sn(1) active*bf(1)\",\Sn(1) constant\"]"^^xsd:string ; nidm_hasDriftModel: niiri:drift_model_id ; nidm_hasHRFBasis: spm_SPMSCanonicalHRF ; nidm_hasHRFBasis: spm_SPMSTemporalDerivative ; nidm_hasHRFBasis: spm_SPMSDispersionDerivative . </pre>
<u>Drift modeling/high-pass filtering</u>	Attribute 'has Drift Model' of a 'Design Matrix' entity. Possible values include: • fsl:'Gaussian Running Line Drift Model' for a Gaussian-weighted running line smoother • spm:'DCT Drift Model' for Discrete Cosine Transform basis.	EXAMPLE: FSL's Gaussian Running Line Drift Model <pre> @prefix fsl_GaussianRunningLineDriftModel: <http://purl.org/nidash/fsl#FSL_0000002> . @prefix fsl_driftCutoffPeriod: <http://purl.org/nidash/fsl#FSL_0000004> . . niiri:drift_model_id a prov:Entity , fsl_GaussianRunningLineDriftModel ; rdfs:label "FSL's Gaussian Running Line Drift Model" ; fsl_driftCutoffPeriod: "2"^^xsd:float . </pre>
<u>Autocorrelation model</u>		

Model type	Attribute 'has Error Dependence' of an 'Error Model' entity. Possible values include: • obo:'Toeplitz covariance structure' for serially correlated error • obo:'unstructured covariance structure' for arbitrary autocorrelation function	EXAMPLE: Error Model: SPM group analysis with non sphericity <pre>@prefix nidm_ErrorModel: <http://purl.org/nidash/nidm#NIDM_0000023> . @prefix nidm_hasErrorDistribution: <http://purl.org/nidash/nidm#NIDM_0000101> . @prefix nidm_errorVarianceHomogeneous: <http://purl.org/nidash/nidm#NIDM_0000094> . @prefix nidm_varianceMapWiseDependence: <http://purl.org/nidash/nidm#NIDM_0000126> . @prefix nidm_hasErrorDependence: <http://purl.org/nidash/nidm#NIDM_0000100> . @prefix nidm_dependenceMapWiseDependence: <http://purl.org/nidash/nidm#NIDM_0000089> . @prefix nidm_IndependentParameter: <http://purl.org/nidash/nidm#NIDM_0000073> . @prefix nidm_ConstantParameter: <http://purl.org/nidash/nidm#NIDM_0000072> . @prefix obo_normaldistribution: <http://purl.obolibrary.org/obo/STATO_0000227> . @prefix obo_unstructuredcovariacestructure: <http://purl.obolibrary.org/obo/STATO_0000405> .</pre> <pre>niiri:error_model_id a prov:Entity , nidm_ErrorModel: ; nidm_hasErrorDistribution: obo_normaldistribution: ; nidm_errorVarianceHomogeneous: "false"^^xsd:boolean ; nidm_varianceMapWiseDependence: nidm_IndependentParameter: ; nidm_hasErrorDependence: obo_unstructuredcovariacestructure: ; nidm_dependenceMapWiseDependence: nidm_ConstantParameter: .</pre>
Spatial definition	Attribute 'dependence Map-Wise Dependence' of an 'Error Model' entity. Possible values include: • 'Constant Parameter' for a global estimate. • 'Independent Parameter' for a local estimate. • 'Regularized Parameter' for a spatially regularized estimate.	<pre>niiri:error_model_id a prov:Entity , nidm_ErrorModel: ; nidm_hasErrorDistribution: obo_normaldistribution: ; nidm_errorVarianceHomogeneous: "false"^^xsd:boolean ; nidm_varianceMapWiseDependence: nidm_IndependentParameter: ; nidm_hasErrorDependence: obo_unstructuredcovariacestructure: ; nidm_dependenceMapWiseDependence: nidm_ConstantParameter: .</pre>
<u>Contrast construction</u>	Attribute prov:value of a obo:'contrast weight matrix' entity provides the contrast vector.	EXAMPLE: Contrast Weights <pre>@prefix nidm_statisticType: <http://purl.org/nidash/nidm#NIDM_0000123> . @prefix nidm_contrastName: <http://purl.org/nidash/nidm#NIDM_0000085> . @prefix obo_contrastweightmatrix: <http://purl.obolibrary.org/obo/STATO_0000323> . @prefix obo_tstatistic: <http://purl.obolibrary.org/obo/STATO_0000176> .</pre> <pre>niiri:contrast_id a prov:Entity , obo_contrastweightmatrix: ; rdfs:label "Contrast: Listening > Rest" ; prov:value "[1, 0, 0]"^^xsd:string ; nidm_statisticType: obo_tstatistic: ; # obo:'t-statistic' nidm_contrastName: "listening > rest"^^xsd:string .</pre>
Group modeling info		
<u>Estimation method</u>	(same as Intra-subject fMRI)	
Statistical inference Inference on statistic image (thresholding)		
<u>Search region for analysis</u>		
Location of the search space image	Attribute prov:atLocation of a 'Search Space Mask Map' entity.	EXAMPLE: Search Space Mask Map <pre>@prefix nidm_SearchSpaceMaskMap: <http://purl.org/nidash/nidm#NIDM_0000068> . @prefix nidm_inCoordinateSpace: <http://purl.org/nidash/nidm#NIDM_0000104> . @prefix nidm_expectedNumberOfVoxelsPerCluster: <http://purl.org/nidash/nidm#NIDM_0000143> . @prefix nidm_expectedNumberOfClusters: <http://purl.org/nidash/nidm#NIDM_0000141> . @prefix nidm_searchVolumeInVoxels: <http://purl.org/nidash/nidm#NIDM_0000121> . @prefix nidm_searchVolumeInUnits: <http://purl.org/nidash/nidm#NIDM_0000136> . @prefix nidm_reselSizeInVoxels: <http://purl.org/nidash/nidm#NIDM_0000148> . @prefix nidm_searchVolumeInResels: <http://purl.org/nidash/nidm#NIDM_0000149> .</pre>

Volume of the search region in voxels. Volume of the search region CC.	Attribute 'search Volume In Voxels' of a 'Search Space Mask Map' entity. Attribute 'search Volume In Units' of a 'Search Space Mask Map' entity.	<pre>@prefix nidm_noiseFWHMInVoxels: <http://purl.org/nidash/nidm#NIDM_0000159> . @prefix nidm_noiseFWHMInUnits: <http://purl.org/nidash/nidm#NIDM_0000157> . @prefix nidm_randomFieldStationarity: <http://purl.org/nidash/nidm#NIDM_0000120> . niiri:search_space_mask_id a prov:Entity , nidm_SearchSpaceMaskMap ; rdfs:label "Search Space Mask Map" ; prov:atLocation "SearchSpaceMask.nii.gz"^^xsd:anyURI ; nfo:fileName "SearchSpaceMask.nii.gz"^^xsd:string ; dct:format "image/nifti"^^xsd:string ; nidm_inCoordinateSpace: niiri:coordinate_space_id_2 ; nidm_expectedNumberOfVoxelsPerCluster: "0.553331387916112"^^xsd:float ; nidm_expectedNumberOfClusters: "0.0889172687960151"^^xsd:float ; nidm_searchVolumeInVoxels: "65593"^^xsd:int ; nidm_searchVolumeInUnits: "1771011"^^xsd:float ; nidm_reselSizeInVoxels: "22.9229643140043"^^xsd:float ; nidm_searchVolumeInResels: "2552.68032521656"^^xsd:float ; nidm_noiseFWHMInVoxels: "[2.958, 2.966, 2.611]"^^xsd:string ; nidm_noiseFWHMInUnits: "[8.876, 8.898, 7.835]"^^xsd:string ; nidm_randomFieldStationarity: "true"^^xsd:boolean ; crypto:sha512 "e43b6e01b0463fe7d40782137867a"^^xsd:string ; prov:wasGeneratedBy niiri:inference_id .</pre>
<u>Correction for multiple comparisons</u> Corrected or not? Method used for correction Region over which correction for multiple comparisons was performed	Attribute prov:type of the 'Height Threshold' and the 'Extent Threshold' used by an 'Inference' activity Possible values include: - obo: 'FWER adjusted p-value' for an FWE-corrected threshold 'P-Value Uncorrected' for an uncorrected threshold - obo:'q-value' for an FDR-corrected threshold Attribute prov:atLocation of a 'Search Space Mask Map' entity.	EXAMPLE: Voxel-wise $p < 0.05$ FWER-corrected threshold <pre>@prefix nidm_HeightThreshold: <http://purl.org/nidash/nidm#NIDM_0000034> . @prefix nidm_equivalentThreshold: <http://purl.org/nidash/nidm#NIDM_0000161> . @prefix obo_FWERadjustedpvalue: <http://purl.obolibrary.org/obo/OBI_0001265> . niiri:inference_id prov:used niiri:height_threshold_fwer_id . niiri:height_threshold_fwer_id a prov:Entity, nidm_HeightThreshold, obo_FWERadjustedpvalue ; rdfs:label "Height Threshold: $p < 0.05$ (FWER-corrected)" ; prov:value "0.05"^^xsd:float ; nidm_equivalentThreshold: niiri:height_threshold_stat_id .</pre>
<u>Voxel-wise significance</u> Corrected for Family-wise error (FWE) or false discovery rate (FDR)? If FWE found by random field theory list the smoothness in mm FWHM RESEL count	Attribute prov:type of the 'Height Threshold' used by an 'Inference' activity (cf. above for possible values), Attribute 'noise FWHM In Units' of a 'Search Space Mask Map' entity. Attribute 'search Volume In Resels' of a 'Search Space Mask Map' entity.	(cf. example for 'Search region for analysis' and 'Correction for multiple comparisons')

Cluster-wise significance		
cluster-defining threshold	Attribute prov:value of the ' Height Threshold ' used by an ' Inference ' activity.	EXAMPLE: Cluster-wise $p < 0.05$ FWER-corrected threshold with cluster-forming threshold of $p < 0.001$ uncorrected <pre> @prefix nidm_HeightThreshold: <http://purl.org/nidash/nidm#NIDM_0000034> . @prefix nidm_PValueUncorrected: <http://purl.org/nidash/nidm#NIDM_0000160> . @prefix nidm_ExtentThreshold: <http://purl.org/nidash/nidm#NIDM_0000026> . @prefix obo_qvalue: <http://purl.obolibrary.org/obo/OBI_0001442> . niiri:extent_threshold_fdr_id a prov:Entity, nidm_ExtentThreshold:, obo_qvalue: ; rdfs:label "Extent Threshold: $p < 0.05$ (FDR-corrected)" ; prov:value "0.05"^^xsd:float . niiri:height_threshold_unc_id a prov:Entity, nidm_HeightThreshold:, nidm_PValueUncorrected: ; rdfs:label "Height Threshold: $p < 0.001$ (uncorrected)" ; prov:value "0.001"^^xsd:float . </pre>
cluster significance level	Attribute prov:value of the ' Extent Threshold ' used by an ' Inference ' activity.	
smoothness (for random field theory)	Attribute ' noise FWHM In Units ' of a ' Search Space Mask Map ' entity.	
RESEL count	Attribute ' search Volume In Resels ' of a ' Search Space Mask Map ' entity.	

Supplementary File 1. Checklist to report neuroimaging results for intra-subject fMRI and group models from (Poldrack et al. 2008) and corresponding representation in NIDM-Results. The following items from the original checklist were excluded as not available automatically: “design type”, “orthogonalization of regressors”, “additional regressors used”, “if not whole brain, state how region of analysis was determined”, “If correction is limited to a small volume, the method for selecting the region should be stated explicitly”, “threshold used for visualization in figures”, “correction for multiple planned comparisons within each voxel”.