

## About this Document

This document is provided to help guide staff working with the CTRL databases to understand the correct way of using and constructing the phasing data within the database.

It is divided into two main sections:

1. The first section is optional reading and is intended for those wishing to understand the derivation and structure of two new tables listing the objects retrieved from the events covered by the databases.
2. The second section should be read by all staff involved in the phasing of the deposits examined in the events covered by the databases.
3. The final section describes the method that will be employed to assess the quality of the final database and is closely linked to the production of the mapping data for Kent County Council.

### 1: The New Tables

Two new tables have been included in each of the project databases.

These are tblObjectDates and tblContextDates.

#### How these tables have been created.

These tables have been derived from the submitted specialists' data for each project. In some cases where particular types of find are not being analysed, data from the assessments have been included in order to provide a complete listing of all finds from the project. Each of the specialists use many fields to describe each find and a complete listing of each field and the data contained within it would make the listing unwieldy. The specialist data has therefore been summarised.

There are two types of summary: by object and by context (the latter, tblContextDates, deals only with dating, although it may include some specialist comment about their assemblage). The former deals with the typological date of the object and attempts to describe each object (tblObjectDates).

#### Table tblObjectDates

Typically, this has been done by extracting the keyword description of the object into the ObjectName field (for pottery this equates with the ware fields in the specialist databases). In situations where specialists have used codes these have been translated to the descriptions (where given) of the code meanings.

For example the ObjectName value may read:

“Bowls/dishes with straight, usually vertical, upper wall and a flat base; the rim is usually flat or slightly hooked.” (Romano-British pottery)

This will be known to the specialist as a IVG.

The material making up an object or from which an object is fashioned is described in the ObjectMaterial field (typically for pottery this equates to the pottery fabric as identified by the specialist)

The specialism field indicates the archaeological specialism which has identified the object.

Free text descriptions, where made, are located in the ObjectDescription field.

The two fields ObjectMinDate and ObjectMaxDate describe the date assigned to each object purely on its typological characteristics. Where these fields are blank, it means that the object cannot be dated on its typological characteristics.

The analysis level field describes whether the description of the object has come from the current post-excavation analysis or whether the description is derived from the existing assessment data.

If it is determined that the analysis of an event would be helped by a detailed examination of specialist data not included in the tables, it will be necessary to return to the source data.

## **Table tblContextDates**

Contexts may have more than one estimate of the date of the context. Each row in this table therefore represents an estimate by a specialist based on the examination of their object assemblages only. Context 100 may therefore have an estimate of 50 to 100 AD from the Roman pottery specialist but 4000 to 2000BC from the flint specialist. This would describe a context probably of early Romano-British date but also containing residual worked flint. Not all specialists are making estimates of the date of a context. In these cases, a set of context dates has been calculated by taking the earliest date of the latest datable find (the terminus post quem). The field DateMeaning can be used to distinguish the rows that have been calculated by computer and those where a specialist has specifically stated a estimate of the context's date.

## **Some Gotcha's in the data as presented**

The Romano-British pottery specialists insist on providing context dates as well as typological dates. They argue that the context date that they assign is a better estimate of date than taking the earliest typological date of the latest Romano-British pottery sherd (P.Booth, pers comm). because of the complexity of pottery dating. Therefore using tblObjectDates alone when dating Romano-British deposits may lead to subtle errors of dating.

The prehistoric pottery fabric codes are made up of two parts: a letter or series of letters which describe the overall fabric class (for example, I believe F stands for a flinty fabric) and a numeric part which describes a specific type of fabric that can be identified. These numbers are actually site specific. So for those projects with more than one event code, the data may be F1 for the prehistoric fabric but this may be a different fabric type from an F1 with a different event code.

## 2: Some suggestions for refining the dating on the basis of tblObjectDates and tblContextDates

The following sections looks at one subgroup and the finds within it and suggests one approach that might be taken to refining the dates. It should be understood that this approach will be the one applied to the data to produce the final mapping data (ESRI shape files for delivery to Kent County Council Sites and Monument Record)

The sub-group chosen comes from the Tollgate project, event code ARC 330 98C. The subgroup number is 4184 and is a pit apparently dating to the Romano-British period. The stratigraphy of the pit looks like this:

Sub-group comment field: left blank because a final description of the subgroup has not yet been decided upon

	SubGroup	Subgroup	SubGroupPeriod	Subgr	Interven	InterventionType	Interve	InterventionPeriod	Deposit	PX_RANK	DepositComments	DepositPeriod
▶	4184	pit	40 to 400		673	Cut	PIT	Not assigned a date	677	3	fill of pit	Not assigned a date
	4184	pit	40 to 400		673	Cut	PIT	Not assigned a date	609	2	fill of pit	Not assigned a date
	4184	pit	40 to 400		673	Cut	PIT	Not assigned a date	674	1	primary fill of pit	Not assigned a date
	4184	pit	40 to 400		673	Cut	PIT	Not assigned a date	678	1	primary fill of pit	Not assigned a date

The pit has already been assigned a date range of 40 to 400 (broad Romano-British), presumably at the assessment stage of work. It was excavated using a single slot (which may or may not have removed the entirety of the fills in the ditch) This can be read from the single intervention number 673 in the four rows of data listed. There appear to have been four fills within the pit with 674 and 678 appearing at the bottom of the pit with 609 stratigraphically later and 677 marking the uppermost surviving fill of the pit.

The data has been retrieved from the database using the query qryReconstructFeaturesPX. These records have then been filtered on the subgroup number 4184 and sorted Z to A (descending order) on the field PX\_RANK. Many of the fields in the query have been hidden in order to produce a screenshot that will fit on one page.

Since the InterventionPeriod and DepositPeriod fields show the value “Not assigned a date” we know that the PX\_MinDate and PX\_MaxDate fields in the Context table have not been filled in. Roughly speaking in this case, the Intervention corresponds to the “cut” context number and “deposit” to the deposit context number.

We can use tblObjectDates to look at the objects within this subgroup. These are shown below:

CONTE	Specialism	ObjectMaterial	ObjectName	ObjectDate	ObjectDate	ObjectDescription	ObjectCount	ObjectWeight
609	Romano-British pot	reduced `coarse' ware fabrics (Romanis	unidentified vessel	40	170		1	218
609	Romano-British pot	Early Roman (and late Iron Age) `Belgi	unidentified vessel	40	130		2	13
609	Romano-British pot	Early Roman (and late Iron Age) `Belgi	unidentified vessel	43	130		1	275
609	Romano-British pot	Early Roman (and late Iron Age) `Belgi	unidentified vessel	43	130		5	22
609	Romano-British pot	oxidised `coarse' ware fabrics (Romani	unidentified vessel	50	150	Patch Grove	1	103
609	Romano-British pot	oxidised `coarse' ware fabrics (Romani	unidentified vessel	50	150	Patch Grove	1	91
609	Romano-British pot	reduced `coarse' ware fabrics (Romanis	unidentified vessel	-50	100	fine flint and sand, not late	1	73
609	Romano-British pot	reduced `coarse' ware fabrics (Romanis	unidentified vessel	-50	100		1	17
609	Romano-British pot	oxidised `coarse' ware fabrics (Romani	unidentified vessel	43	130		1	3
609	Romano-British pot	oxidised `coarse' ware fabrics (Romani	unidentified vessel	50	150	thin-walled Patch Grove?	1	72
609	Romano-British pot	Early Roman (and late Iron Age) `Belgi	unidentified vessel	43	130		1	27
609	Romano-British pot	Early Roman (and late Iron Age) `Belgi	unidentified vessel	43	100		1	57
609	Romano-British pot	(Generally) calcareous tempered fabric	Jars	70	130	large, thin-walled jar	5	704
609	Romano-British pot	Early Roman (and late Iron Age) `Belgi	unidentified vessel	43	75		38	855
609	Romano-British pot	reduced `coarse' ware fabrics (Romanis	Ovoid beaker with high	150	200		2	119
609		Fired clay	FCLAY			x1 flat face	2	60
609	Romano-British pot	(Generally) calcareous tempered fabric	unidentified vessel	43	100	lid-seated bead-rim jar Thor	1	166
674	Romano-British pot	reduced `coarse' ware fabrics (Romanis	unidentified vessel	70	130		2	5
674	Romano-British pot	oxidised `coarse' ware fabrics (Romani	unidentified vessel	43	130		1	6
674	Romano-British pot	(Generally) calcareous tempered fabric	Bead-rim jars. Neckles	43	100		1	25
674	Romano-British pot	reduced `coarse' ware fabrics (Romanis	Beaker with a short, fre	50	100		1	10
674	Romano-British pot	Early Roman (and late Iron Age) `Belgi	Jars	43	120	Thompson type ? (check w	1	56
674	Faunal remains	Animal Bone	Rib			Medium Mammal	2	1
674		Burnt flint	FLB			calcined white to grey	23	67
674		Burnt flint	FLB			calcined white to grey	23	67
674		Fired clay	FCLAY			part burnt	3	25
678		Fired clay	FCLAY				3	150
678	Romano-British pot	Black-burnished wares (including imita	unidentified vessel	120	300		4	12

We can see that three of the fills of the pits contain a variety of finds, many of which appear to typologically datable and may therefore help us to refine the assessment period dating of 40 to 400 AD for this feature.

The finds and the stratigraphy of the subgroup can be put together so that it is possible to order the finds so that those at the top of the feature appear at the top of the screen, as shown below:

SubGrp	Subgr	Interv	Deposit	SubGroupPer	Object	Object	PX_RA	ObjectName	DepositCommer	SubgroupComments	DepositPeriod
4184	pit	673	677	40 to 400			3		fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	43	130	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400			2	FCLAY	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	43	130	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	40	170	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	43	75	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	150	200	2	Ovoid beaker with high rounded sh	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	43	100	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	43	100	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	40	130	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	50	150	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	43	130	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	-50	100	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	-50	100	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	70	130	2	Jars	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	50	150	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	43	130	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	609	40 to 400	50	150	2	unidentified vessel	fill of pit		Not assigned a date
4184	pit	673	678	40 to 400			1	FCLAY	primary fill of pit		Not assigned a date
4184	pit	673	674	40 to 400			1	FLB	primary fill of pit		Not assigned a date
4184	pit	673	674	40 to 400	43	120	1	Jars	primary fill of pit		Not assigned a date
4184	pit	673	674	40 to 400			1	FLB	primary fill of pit		Not assigned a date
4184	pit	673	674	40 to 400	43	130	1	unidentified vessel	primary fill of pit		Not assigned a date
4184	pit	673	674	40 to 400	43	100	1	Bead-rim jars. Neckless bead-rim	primary fill of pit		Not assigned a date
4184	pit	673	674	40 to 400			1	FCLAY	primary fill of pit		Not assigned a date
4184	pit	673	674	40 to 400	70	130	1	unidentified vessel	primary fill of pit		Not assigned a date
4184	pit	673	674	40 to 400	50	100	1	Beaker with a short, frequently sha	primary fill of pit		Not assigned a date
4184	pit	673	674	40 to 400			1	Rib	primary fill of pit		Not assigned a date
4184	pit	673	678	40 to 400	120	300	1	unidentified vessel	primary fill of pit		Not assigned a date

The columns have been ordered to place all the dating columns and the PX\_rank field together. In interpreting this list, the bottom-most row would suggest that it is unlikely that the primary fills of the pit were deposited before 120AD. It would also seem likely that the latest datable pit fill 673 had been deposited by 150 to 200AD or shortly thereafter. Because we are working with the Romano-British pottery we should check this interpretation with the specialist opinion.

The list above was generated from the query OBJECT DATES.

The next screenshot puts the context dates together with the pit.

SubGr	Subgro	SubGroupPe	Intervent	Interve	Deposit	Conte	Context	PX_R	DepositComme	DepositPerio	Specialism	ContextComm
4184	pit	40 to 400	673	PIT	677			3	fill of pit	Not assigned		
4184	pit	40 to 400	673	PIT	609	150	200	2	fill of pit	Not assigned	Romano-British pottery	
4184	pit	40 to 400	673	PIT	678	120	300	1	primary fill of pit	Not assigned	Romano-British pottery	
4184	pit	40 to 400	673	PIT	674	70	120	1	primary fill of pit	Not assigned	Romano-British pottery	

Again the columns have been ordered to place all the dating columns and the PX\_Rank field together. Here we can see that our interpretation of the object dates corresponds with the specialist's view of the individual context assemblages.

The list above was generated using the query CONTEXT DATES.

At this point we might like to redefine the dating for the sub-group to reflect the re-assessment of the date of the feature and we could enter 120 in the PX\_DateMin against the subgroup 4184 in the SUB\_GROUP table and 200 in the PX\_MaxDate field. We might also like to write a brief comment in the sub-group comments field explaining the reasoning behind the dating decision or remarking on any notable points about the pit and its fills.

At this point, we have briefly covered the mechanics of assigning the dates. There are other possibilities that we need to consider. Upto now I have taken the data at face value and have not considered the possibility that the pit might cut a medieval ditch. This would make all the Romano-British pottery that was the basis for the dating decision residual. In this instance, I might comment on this and actually assign the range 1000 to 1330 to the sub-group post-excavation dating fields.

Alternatively, I might decide that the feature was open for a considerable period of time (in the example given here, probably not justified). In this case, I could assign different ranges to reflect the different phases of infilling/ use of the feature by entering the minimum and maximum date values against each context number. The pit might be cut around 70AD. Therefore the cut number 673 would get a range of 60 to 80AD. It was then partially filled between 100 and 120 the contexts 674 and 678 might get the values 100 to 120. Context 609 was deposited in the fourth century AD and this would get the values 300 to 399. The sequence of events within the pit would then be explained textually in the sub-group PX\_Comments field.

Finally, depending on the nature of the archaeological features and deposits on the site(s), I might decide that while this allows me to be really specific about individual features and deposits, the nature of the archaeology suggests that dating 40 or so pits with slightly different date ranges does not really help with communicating with the specialists on the project. I might decide therefore that there were in fact three major events of pit construction and use. I might therefore decide to assign the outside date ranges of each of these events to the sub-groups defining the pits within each of these events. So if our sub-group 4184 belonged to a series of pits all falling within the date range 50 to 250 AD, I might assign those dates to each of the pits. Alternatively, I might decide that I need the extra detail and assign each pit within one of the events to a group defining the event and assign the wider date range to the group number in the GROUP table. This would leave the sub-group and context dating fields to express the finer intricacies of the dating.

The final screenshot shows how the data might look, if the unjustified decision was followed that the pit remained open and visible in the landscape for a considerable period of time, with periodic phases of in-filling. The list was generated using the query qryReconstructFeaturesPX. You would then be able to attached the objects and their dates to assess my decisions and hopefully politely say... "What is he talking about? I'd date that to 120 to 200AD".

SubGroupID	Subgroup	SubGroupPeriod	SubgroupComments	InterventionID	InterventionType	InterventionPeriod	DepositID	PX_RA	DepositPeriod
4184	Pit	60 to 450	This pit was constructed early in the Roman period and then subsequently filled in three major stages.	673	PIT	60 to 80	677	3	399 to 450
4184	Pit	60 to 450	This pit was constructed early in the Roman period and then subsequently filled in three major stages.	673	PIT	60 to 80	609	2	300 to 399
4184	Pit	60 to 450	This pit was constructed early in the Roman period and then subsequently filled in three major stages.	673	PIT	60 to 80	674	1	100 to 120
4184	Pit	60 to 450	This pit was constructed early in the Roman period and then subsequently filled in three major stages.	673	PIT	60 to 80	678	1	100 to 120

## Some Final Points

- You will find that it is not possible to edit the data using the queries that have been described here. It is necessary to edit the three tables CONTEXT, SUBGROUP and GROUP.
- The approach described above results in minimal editing of the database. For most situations it will be sufficient to describe the phasing only in the correct row of the database for the SUBGROUP table. While it may appear from the above screen shot that the free text in SubgroupComments has been entered four times, this is not actually the case
- You should remember to edit the fields prefixed with PX\_. For example adding the above comment in the database's original comment field will mean that the data does not show when the query is run. The text should be entered in the PX\_Comment field.

### 3: Final assessment of the data and output to GIS

The final assessment of the quality of the data will be made using qryOutPutPX. While working with the database you can periodically run this query to get an idea of your progress.

The screenshot below shows the list generated by this query:

SpatialKey	Event_Code	SourceNo	SubGroupInterpre	SUBGROUPPERIOD	Ilevel
ARC 330 98C-4166	ARC 330 98C	4166	well	120 to 300	Sub-group
ARC 330 98C-4167	ARC 330 98C	4167	ditch	Not assigned a date	Sub-group
ARC 330 98C-4168	ARC 330 98C	4168	ditch	50 to 100	Sub-group
ARC 330 98C-4169	ARC 330 98C	4169	ditch	50 to 100	Sub-group
ARC 330 98C-4171	ARC 330 98C	4171	pit	Not assigned a date	Sub-group
ARC 330 98C-4173	ARC 330 98C	4173	pit	-1150 to -800	Sub-group
ARC 330 98C-4174	ARC 330 98C	4174	structure-brick kiln	1450 to 1800	Sub-group
ARC 330 98C-4175	ARC 330 98C	4175	stokehole structure	Not assigned a date	Sub-group
ARC 330 98C-4177	ARC 330 98C	4177	pit	50 to 100	Sub-group
ARC 330 98C-4178	ARC 330 98C	4178	pit	Not assigned a date	Sub-group
ARC 330 98C-4179	ARC 330 98C	4179	ditch	Not assigned a date	Sub-group
ARC 330 98C-4180	ARC 330 98C	4180	pit	Not assigned a date	Sub-group
ARC 330 98C-4181	ARC 330 98C	4181	pit	Not assigned a date	Sub-group
ARC 330 98C-4182	ARC 330 98C	4182	pit	40 to 100	Sub-group
ARC 330 98C-4184	ARC 330 98C	4184	Pit	60 to 450	Sub-group
ARC 330 98C-4185	ARC 330 98C	4185	pit	Not assigned a date	Sub-group
ARC 330 98C-4186	ARC 330 98C	4186	ditch, streambed	Not assigned a date	Sub-group
ARC 330 98C-4187	ARC 330 98C	4187	trackway	Not assigned a date	Sub-group
ARC 330 98C-4188	ARC 330 98C	4188	road/trackway	Not assigned a date	Sub-group
ARC 330 98C-4193	ARC 330 98C	4193	wheel ruts	40 to 100	Sub-group
ARC 330 98C-4194	ARC 330 98C	4194	gully	Not assigned a date	Sub-group
ARC 330 98C-4195	ARC 330 98C	4195	natural feature	Not assigned a date	Sub-group
ARC 330 98C-4196	ARC 330 98C	4196	trackway	Not assigned a date	Sub-group
ARC 330 98C-4197	ARC 330 98C	4197	ditch	Not assigned a date	Sub-group
ARC 330 98C-4198	ARC 330 98C	4198	ditch	120 to 300	Sub-group
ARC 330 98C-4199	ARC 330 98C	4199	ditch drainage	Not assigned a date	Sub-group
ARC 330 98C-4200	ARC 330 98C	4200	ditch drainage	Not assigned a date	Sub-group
ARC 330 98C-4201	ARC 330 98C	4201	ditch	Not assigned a date	Sub-group
ARC 330 98C-4202	ARC 330 98C	4202	ditch drainage	40 to 400	Sub-group
ARC 330 98C-4203	ARC 330 98C	4203	ditch drainage	Not assigned a date	Sub-group

This query effectively picks out from the database only those elements that should exist on the site plan. Browsing down the list, you will see for example that there are no fills included.

When we look at the sub-group that we phased (4184), we can see that it shows the result of our phasing decision (I have used the unjustified example). However, it is clear that many of the features have not been assigned a date and we can therefore see that the data is incomplete.

The Ilevel field describes the table from which the data has been derived. In the above example, because I wanted to include 4184, there are only sub-groups visible.

Where a decision has been made not to create a sub-group, the generated list will look like this:

SpatialKey	Event_Code	SourceNo	SubGroupInterpre	SUBGROUPPERIOD	Ilevel
ARC CRS 98-5	ARC CRS 98	5	fire pit	-1099 to 43	Sub-group
ARC CRS 98-6	ARC CRS 98	6	modern pit	1500 to 1799	Sub-group
ARC CRS 98-8	ARC CRS 98	8	fire pit	Not assigned a date	Sub-group
ARC CRS 98-9	ARC CRS 98	9	modern pit	1500 to 1799	Sub-group
ARC CRS97-1	ARC CRS97	1	layer	Not assigned a date	Context
ARC CRS97-10	ARC CRS97	10	layer	Not assigned a date	Context
ARC CRS97-11	ARC CRS97	11	layer	Not assigned a date	Context
ARC CRS97-12	ARC CRS97	12	layer	Not assigned a date	Context
ARC CRS97-13	ARC CRS97	13	layer	-1099 to -700	Context
ARC CRS97-14	ARC CRS97	14	natural	Not assigned a date	Context
ARC CRS97-15	ARC CRS97	15	layer	Not assigned a date	Context
ARC CRS97-16	ARC CRS97	16	natural	Not assigned a date	Context



Here we can see that some contexts have been included. These show in the list because they have not been assigned to sub-groups but may still need to be included on the site plan.

## **Some Subtleties of this Approach**

- Layers: layers arguably should appear on the site plan. You may find that your layers do not show in the list generated by qryOutputPX. To ensure this: change the context type field value from deposit to layer.
- You may have dated a feature, but the list does not show the date you have decided upon. If you have assigned a sub-group ensure that you have filled in the dating fields for that sub-group. If you have not assigned a sub-group ensure that the intervention dating fields are filled in. For a negative feature this is the context number that describes the cut; for positive features such as walls this is the number that describes the wall or the construction cut for the wall. For layers this is the context number describing the layer.
- Finally, the screenshots do not include the PX\_comments field, due to deficiencies in the original RLE data structure. These will be included in the final data and we expect to see suitable descriptive text for groups and sub-groups and for contexts that have not been assigned to sub-groups.

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