**Note on Special treatment for Halants – to check with Program routine**

1. A complete word can end with the following Consonant Halants -   
   k,T,t,p,~g,N,n,m,l. (in addition to Visaragam endings)  
   But N cannot be the ending at the end of a statement/Ruk. It will retain ‘n’ only. We could never find a padam with ‘’l’ ( ல் ending)
2. Of these two ~g, n being nasal has distinct representation in Pada Paatam. In a padam ending with short vowel, ~g and n doubles.   
   Examples (you are already aware) – asminn, tasminn, pratya~g~g.
3. If there is a swaram for short vowel it is represented over ~g or ‘n’. viShva~g~g# | rAjann# |
4. If the ending is long vowel there is no doubling of n,~g.   
   e.g. aqsmAn, parA~g#
5. The Swaram if any is put over the ~g or n in Padam or at the end. This is getting correctly treated for n in the output.   
   yaqj~jiyAn# | sarvAn# |
6. At the end check the treatment defined for ~g.
7. Sandhi Rules:for your check   
   ‘n’ after short vowel followed by vowel – asminn+eva = asminneva  
   n’ after long vowel followed by vowel - AqdiqtyAn | eqva = AdityAneva

~g after short vowel followed by vowel - kavA#tirya~g~g | iqvaq | = kavAtirya~g~giva like n only  
~g after long vowel followed by vowel prA~g | iqvaq = prA~giva  
For these two letters, the swaram is adjusted to the previous vowel sound. But remember the ending should be as per Pada Paatam as in ‘n’ which you have taken care already. This note is to help check ~g programming.

The two changes you need to make which you have confirmed one of them:

1. A long letter ending with any halant except ~g and n at the end of the statement or Ruk shall get Dheerga Swaritam.
2. If there is a swara bhakti there can’t be Dheerga Swaritam before swarabhakti it has to retain Swaritam.
3. Issues : We have not mastered all swara bhakti for n with y,v, or h.
4. We need to build/consolidate our learning and build rules as to give final output in formatting or before swaram is determined.
5. Has the program been made for Dheerga Swaritam for short vowels followed by nth etc. e.g. tasmi$nth suparNo , tamin$th sarvam pratiShtitam (Purusha Suktam)
6. saM.j~jAnam is a typical odd case, there is pause between this saM and j~jAnam.. if sam gets Swaritam it becomes Dheerga Swaritam if j~jA follows.   
   If these cases are difficult we will take a note in Excel Sheet and correct the output. For now please correct the two instances and run Jatai, Ghanam of Rudram and Jatai for Chamakam.
7. We will build any easy rules that can be added to json as we go along with each PraSnam.