An overview of contemporary Persian music

The main purpose of preparing this article is ‘how to deploy western music software (HA) to be able to write and manipulate different tones for Persian music and how to handle quarter tones.
Notice: This article prepared by a music fan and not a musician just for a hint on the above subject.
Three books have been reviewed and used as describe below:

Persian translation of “Dastgah concept in Persian music” by Dr Hormoz Farhat
Cambridge university press p:1990
“Accord and scales in music theory” by Shahram Khosh sana’at first editin p:2007

Note: Persia is historical name of Iran.

Persian music
For more than two thousand years music has been teached by man to man order and there were no any kind of writing music method that musician can used to write what they created.
Although philosophers has written a few books on music theory and some kind of notation has been used by them but these books are just theory and mainly they are in Arabic language since after Arab (Muslems) invasion to Persia for the next 500 years the official language of Persia have been Arabic language and still some Persian philosopher prefer to write in Arabic language to avoid people protest and Take advantage of the flexibility of Arbic language for philosphy terms.
But any practical notation for normal musician was not defined.
Persian writers believe that the origin of music in middle east is from Persia and this explains close relation of Persian, Arabic and Turkish music.
Certainly Arabs and Turks believe the origin of music is their land but in any case these three sets of music are very close together.
In the late 19th century and beginning of 20th century few Persian musician who teached in Europe decided to use formal European notation to write Persian music and defining of Persian music in terms of it.
The greatest one who was accepted by most people was Mr Vaziri and his famous follower Mr Khaleghi that his book has been used to prepare this article.
Mr Vaziri realized that there are some tones in Persian music which could not be written by European notation so he introduced two new symbol called Sori and
Keron which are *approximately* a quarter tone higher and lower from an standard European note respectively.

By using these two new symbols, he defined a complete range of tones of Persian music as follows:

He called this as Persian chromatic scale or 24 gamme which had 25 tones or notes and 24 quarter notes.
This does not mean that Persian sclae consist of 24 different tone. it is just the principal scale and by employing seven notes ( eight if we say from C to C) of it a secondary scale can be produced and a Persian music piece can be written by this secondary scale which we call it Magham.
It is necessary to remind that in Persian music key signature change is allowed so a music piece could be consist of two or more scales. It means in a persian music piece the number of tones can be higher than 7 but only after a key signature change.

We should notice that he was trying to match two different system together in such a way that even harmony rules can be applied to Persian music.

**In real world there is not quarter tone difference between any two consecutive notes in Persian scales.** (Dr Farhat page 40)

Difference between two consecutive notes are approximately a complete tone or half a tone or $\frac{3}{4}$ tone.

We can see this points in the following picture that different Magham or what I define it as secondary scale consist of 7 different note and not 24 note.

(Arabs and Turks also use word Magham but they mean something more complicated than just a scale. They mean it something equal to what Persian call it Dastgah and is beyond of the scope of this essay. Their different maghams and Persian different Dastgahs are some thing like Malaguena, Farruca, Bolerias, Danza mora, .... in spanish flamenco music).

![fig-3](a famous persian scale)
(There are few Maghams which consist of just five or four different tones and rarely some ornament appears in a piece which could increase the number of tones more than 7 but they are transient and are not some part of the scale).

But it is not the whole story because Mr Vaziri who introduced quarter tones, he was trying to match two different systems and he knew that the quarter tones can reproduced approximately the needed tones.

After him other people did not agree with him and they claimed quarter tones idea does not belong to Persian music and is synthetic. In spite of new ideas still Keron and Sori are popular and the only way Persian can write their music.

Different investigation carried out by Dr Berkeshli, Dr Farhat and some student of Tehran University all reach to the conclusion that quarter tones are not constant and are not equal to 50 cents. (Between 50 to 63 cent Khosh sana’at page 154) Dr Farhat even went further and claimed scales in Persian music has no meaning at all and a very detailed measurement of Persian tones has been introduced by him which impIlicity suggests musician should reject European note style and change everything and begin from scratch which is not welcome by other musician.

A comparision between his measurements and information on a table presented in Wikipedia reveals that he believed quarter tone in Persian music are varying from 46 to 69 cent compare to European tone definition.

This problem has not been resolve yet Because the traditional music big teachers have different ideas about it and they could not agree on what tone is the best or real one and still they are argue with each other.

Major and minor scales among the others also apear in Persian music the following picture illustrated it.
fig-4 An example of different scales of persian Dastgah
Arabic music

Arabic music is very close to Persian music. They use Persian names for a variety of their Magham which support Iranian writers' opinion about the origin of Middle East music. They have chosen almost the same way to interpret their music as Iranian with European notes but the symbols they use are different. It means they have decided probably to use exact quarter tones. These two symbols are:

- A quarter tone higher
- A quarter tone lower

fig-5 Symbols for quarter tone in Arabic music

fig-6 An example of Arabic scales of different Maghams
Conclusion:

Since Persian music scales consist of minimum four and maximum 7 different tones, it should be easily handled by a western software as far as the tones themselves are our concern.

To simplifying the procedure to create necessary tones for Persian music we can consider it about 50 cent which already exist in HA. by doing this, Arabic (Turkish) music also can be treated as well.

The only problem remains is how to put these symbols to key signature by an array like:

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I have used the symbols that Arab uses for sori and keron because they are symbols for exact quarter tones.
Normaly in the key signature, first sharp and flat symbols appear and on the right of them quarter tone symbols appear.

General solution

As far as I could find about eastern music (include Chinese, Japaniese and Indian), none of them consist of more than 7 tones in one specified scale although ornament notes rarely increase the number of tones to more than 7 but still the number of tones remain the same as in major and minor scales which I believe is handled by 8 different variable minimum in music software like HA.
It means at a specified key signature the number of needed variables to handle eastern music never go beyond 8 different variables. It seems that eastern music can be handled by HA without any need for a big change in the program structure. All we need is to define a tunable sharp and flat from zero to 100 cent instead of using constant sharp and flat. In such a way all eastern music tones can be constructed.  

(Since I am not familiar with HA structure the above statement can be false. It is just based on logical deduction)  
The following example illustrated the above idea:

![Fig-7: The concept of tunable sharp and flat for defining key signature](image)

The facility of tunable sharp and flat not only enable us to write any melody and key signature needed for eastern music but also can introduce a new world of melody which have never been written, played or listened by anyone before! Welcome to a new generation of music.