



## SaxoVerse an electroacoustic composition for Alto Saxophone, Piano and Computer

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### Abstract

This article discusses on the music work, SaxoVerse for alto saxophone, piano, and computer, which is an electroacoustic composition that mixes instruments based on its concept inspired from a computer-animated film “Spider-Man Into the Spider-Verse” and its appropriation to the history of the saxophone. The authors also acknowledged the influence of musical works by Berlioz, Cardew, Cowell, and Lutoslawski in the composition side of this study. The article shows the materials and methods of composition such as the *idée fixe* from *Symphonie fantastique*, various synthesized sounds, different piano techniques, and jazz improvisation techniques. Also, the collaboration between contemporary classical composer and jazz alto saxophone improviser is presented. Both authors discussed the result by describing each section of the piece first by the composer then by the performer. Finally, the article summarizes the performance, the youtube.com broadcasting and the achievement of a new music creation that combined text reciting, jazz improvisation, avant-garde style, and electronic sound.

**Keywords:** *Computer Music, Avant-garde, Alto Saxophone, Jazz, Improvisation, Electroacoustic Composition, Quotation*

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### 1. Introduction

SaxoVerse is an electroacoustic piece the authors created as a work for Alto Saxophone, piano, and computer to participate in the electronic music festival “Loop” at the conservatory of music, Rangsit University, in 2019 then broadcast on youtube.com.

The piece was inspired by the concept of multi-universe in a computer-animated film “Spider-Man Into the Spider-Verse” (Fig. 1). At the same time, the composer (Boonrut) would like to use saxophone and its related text or “verse” as raw materials. Eventually, the composer decided to include an article about saxophone written by Hector Berlioz as the text material in the piece.



**Figure 1** A poster of the computer-animated film: Spider-Man into the Spider-Verse.  
Courtesy of Sony Pictures.



Besides the meta-music inspirations, the composition techniques, from contemporary classical music, jazz, and electronic music, were implemented such as chance operation, graphical score, extended techniques, jazz techniques, quotation, and various audio synthesis with the electronic projection. The chance operation and graphical score were influenced by works of Cornelius Cardew, an English composer whose piece “Treatise” (Cardew, 1967) (Fig. 2) is one of the models. The extended techniques on the piano were influenced by inside piano techniques of musical works by Henry Cowell, especially “The Banshee” (Cowell, 1925) (Fig. 3).

For the quotation techniques, the *idée fixe* from *Symphonie Fantastique* (Fig. 4) and some verses and paragraphs from an article about the saxophone, both by the French composer Hector Berlioz, were used.

The audio synthesis with the electronic projection was influenced by an aleatoric techniques concept used by Polish composer Witold Lutoslawski (Stucky, 1981).

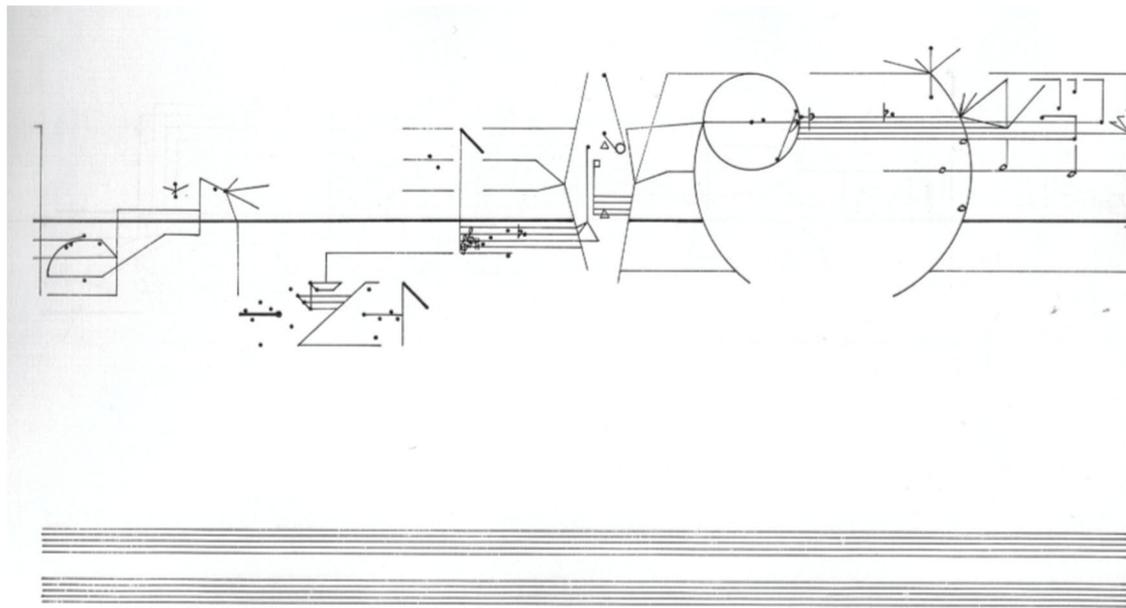


Figure 2 A page of graphic score from “Treatise” (Cardew, 1967)

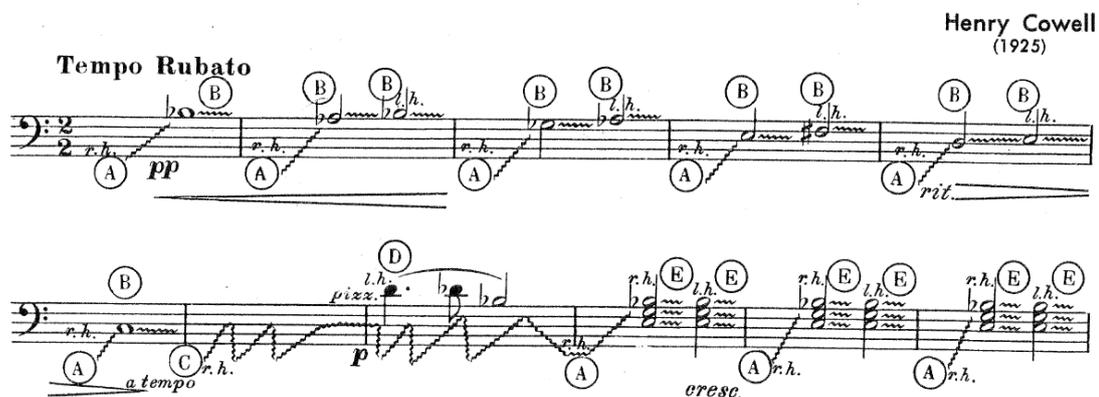


Figure 3 A part of inside piano glissando passages from “The Banshee” (Cowell, 1925)

[984]



Figure 4 An excerpt of the idée fixe from Symphonie fantastique (Berlioz, 1830)

## 2. Objectives

In the compositional aspect, the piece was conceived as an improvisational work that juxtaposes three groups of sound from different instruments. These three groups are Alto Saxophone with effects (via a microphone), amplified piano and computer. These three instruments also represent different styles or "multi-universe" of music. The alto saxophone was designated to play with the jazz-oriented idiom and idée fixe melody from Symphonie Fantastique by Berlioz. The piano was frequently assigned to play the noise and the sound design à la avant-garde. In contrast, the computer was programmed to playback various sounds range from pre-mastered sound waves, synthesizers, previously mentioned text or "verse" about saxophone by Berlioz, and real-time pitch tracking of the saxophone melody through a microphone.

## 3. Materials and Methods

The compositional process started with a schematic plan (Fig. 5). This plan graphically and roughly expressed the parameters as well as the materials used in the work's timespan. It was also used as the structural tool and a guiding map for the musicians. However, some preconceived ideas were changed as the piece developed such as Pi Isan, a free-reed folk instrument from northeastern Thailand (presented in the 3 minutes section), was removed as well as the addition of the PET bottle crushing sounds above the piano soundboard and a pause at the penultimate moment of the piece which was added between rehearsals.

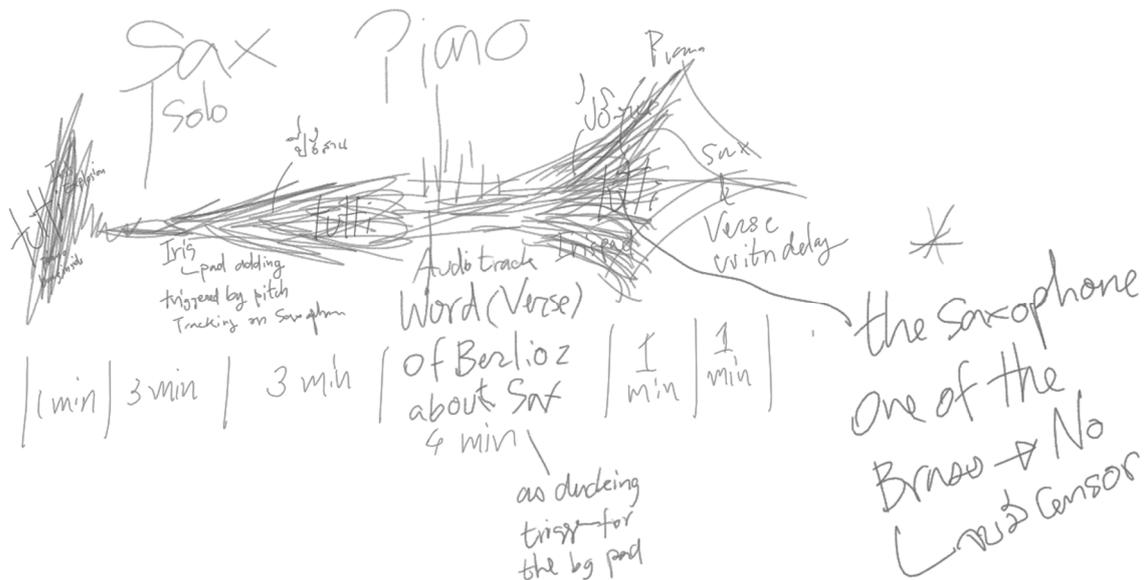


Figure 5 The schematic plan of SaxoVerse

After the schematic plan was sketched, the composer started to create the opening electronic passage by synthesized a group of virtual synthesizers comprises of VacuumPro by Air Technology, Iris 2 by iZotope,



Razor (a Reaktor Synthesizer) by Native-Instruments and Analog Lab 4 by Arturia. The VacuumPro used a patch name “Tomish Kotoish,” which generated the supernatural bass koto-like sound. The Iris 2 used a patch name “Bass-Evil Dead,” which playback a very aggressive distorted sound while Razor activated a patch name “Replicant,” which is a type of moving-pad sound. The last synthesizer is Analog lab 4 used a patch name “Lazaire,” which is a sound modeled from Synthi V synthesizer and made a glissando (or frequency shifted) sound.

#### 4. Results and Discussion

In the performance, these sounds were layered together and mixed with piano clusters (played by both forearms of a musician) and the alto saxophone improvisation.

Next, alto saxophone improvises a long, softer passage while the computer gradually plays the processed pre-recorded saxophone figurations as an accompaniment. These processed saxophone figurations were edited and put into another Iris 2 track. The composer then selected harmonics of the saxophone sounds by differently painted the audio spectrum of the chosen three samples and layered each on equal number slots in Iris 2. (Fig. 6)



Figure 6 Painted audio sample 1 in Iris 2 a virtual instrument by iZotope.

In the performance, the composer played a MIDI controller to trigger this samples-layered patch along with the real saxophone while the pianist played glissandi figurations with a plastic card inside the piano (fig. 7) to create eerie metallic sounds.



**Figure 7** The pianist played glissandi inside the piano with a plastic card

The piece was then gradually increasing tension with a new group of sounds from the computer. This group started with a high pass filtered sound texture that stacked multiple improvised saxophone samples together. The texture then slowly increased the volume by lower the frequency of the filter. This frequency-lowering process was also revealed, by the filter, the hidden texture which has a very aggressive and chaotic quality. The saxophone gradually developed passages from short figurations to free chaotic jazz style. The piano part turned to a loud cluster passage again to mark the abrupt end of this section.

The fourth section started with dialogues of short notes between piano and computer as an introduction to the pre-recorded paragraph of an article about saxophone by Berlioz that read by the computer. When the text reached the point that Berlioz text described the sound quality of the saxophone, the saxophone soloist played the *idée fixe* from *Symphonie Fantastique* which also triggered the pitch tracking processor on the computer. This pitch tracking processor then generated notes that triggered the next Iris 2 track which contains another group of saxophone samples. The real saxophone played the next improvisational part in the contemporary jazz style to answer the last commentary by Berlioz in the chosen text which said: “if he perseveres, he will meet with the support of all friends of music”. This fifth section had the cracking sound of a plastic bottle over the piano as the sound of a newborn bird. With this saxophone and cracking sound, the composer was trying to take the audience journey from initiation of the saxophone to the jazz style of Charlie Parker so-called “The Bird” and beyond.

The Last section of the work is a contemporary jazz contrapuntal section that represented the birth of saxophone in multi-dimension. The composer tried to combine the concept of multi-universe of saxophone music and the prophecy verse about saxophone by Berlioz. However, it has some mistaken verse about saxophone that Berlioz said in his text, “that is the brass instrument with a reed,” which composer muted the word “brass” to make a hiccup effect. In this coda, saxophone played the multi-phones effect which represented the new contemporary sounds beyond the brass instrument with a reed that Berlioz said almost 200 years ago.



*Saxophone improvisation method for a piece, SaxoVerse.*

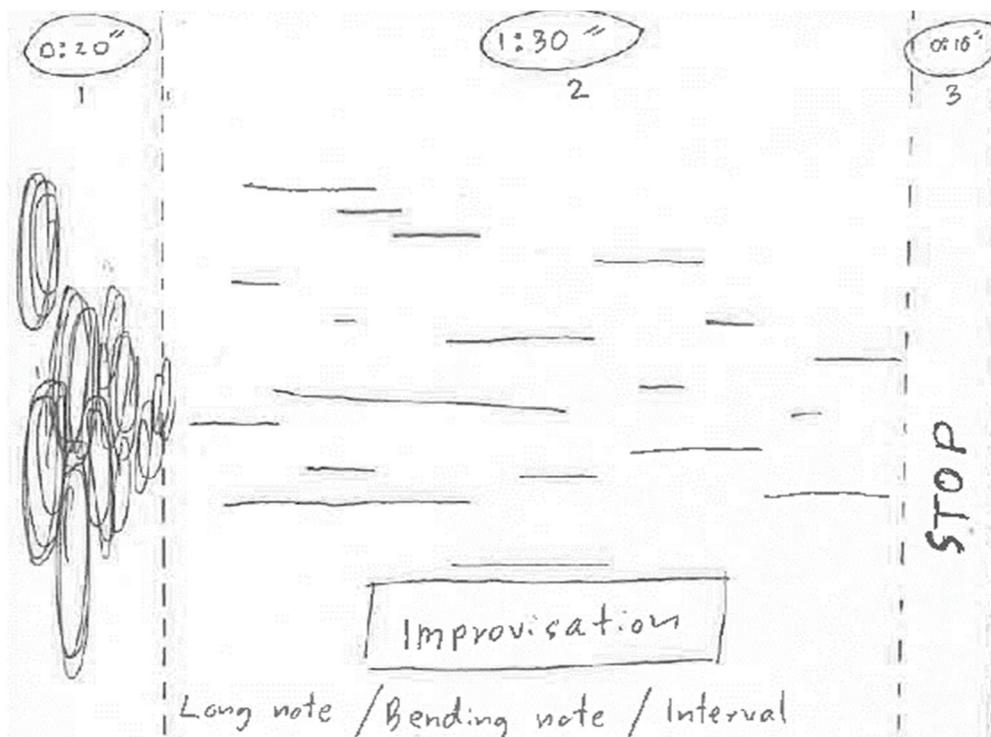
*SaxoVerse*, an original composition that gives a free opportunity to saxophonists to interpret and show a musician's skill within a rough scope from a composer such as a scope of show time is approximately 10 mins, a scope of an idea about what an atmosphere in each part should be and appointing to play a fixed melody for a one specific time. Once a saxophonist seen a music score, written in a Graphic notation, plus listen to a describe idea form a composer, Saxophonist has tried to find a method to play from the given graphic notation by himself. Interpreting method, not easy for a saxophonist. To be able to clarify on a direction, Saxophonist has to write a new specific Graphic notation only for the piece, by scoping a piece's approximately time within 10 mins and divided into two sections, each section has 5 mins long and also assigned a roughly a technic and method of playing in each part.

To make a saxophonist playing a style closet to the composer's idea, the saxophonist has designed a level of intensity into ten levels which can be described as a plying method on a timeline by these following.

Part One, Time 0.00" - 0.20", begins with a ninth level of intensity, all Musicians perform with loud and messy voices to create a shock to an audience so, Saxophonists can freely create a strange sound and may use an aggressive roaring sound.

Part Two, approximately time 0.20" – 1.50", sharply reduces a level of intensity to level one by playing an extended note improvisation combining with a bending note technic which creates a slightly off-tune sound. From a choosing aspect, Saxophonists use an ear training skill to choose a note to match with an unpredictable type of harmony played by an electrical instrument then gradually increase the level of intensity to level 4.

Part Three, approximately time 1.51" – 2.00", stops playing the saxophone, this part is an introduction part from a pianist and electrical instrument.



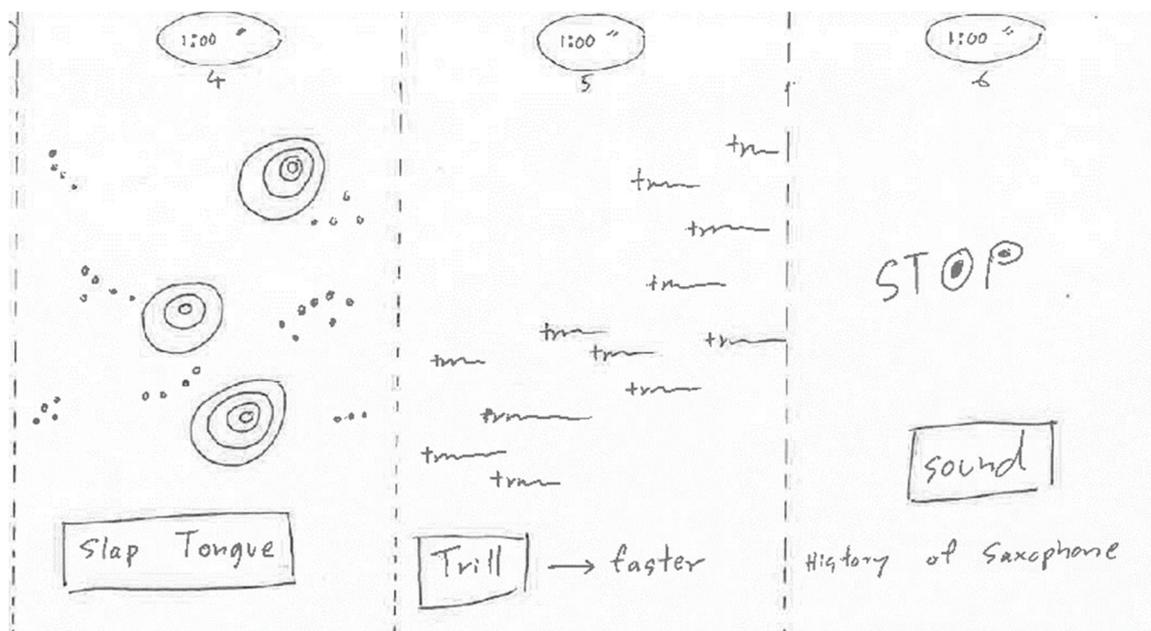
**Figure 8** Graphic notation for saxophone in SaxoVerse part 1-3 by Teerus Laohverapanich



Part Four, approximately time 2.01" - 3.00", begins with a level 1 up to level 5 intensity by using a slap tongue technic. A note created by imagining a picture of big and small spots, of which each spot has a different distance. Also, the creator used an accent in some parts of the piece by imagining about throwing a rock into the water.

Part Five, approximately time 3.00" - 4.00", is a continuous playing form Part Four by gradually increasing the level of intensity from level 5 to level 8, creating a melody using trill technic with a crescendo and slightly increasing a tempo, a higher pitch, and intensity.

Part Six, approximately time 4.00" - 5.00", stops playing the saxophone while the pianist starts performing with a staccato, which creates a similar sound as a saxophone's technic, slap tongue. After that, a speech of a saxophone's history has been played by electrical instrument player.



**Figure 9** Graphic notation for saxophone in SaxoVerse part 4-6 by Teerus Laohverapanich

Part Seven, approximately time 5.00" - 7.30", the saxophonists play a prepared melody from a composer, which some part of a melody comes from a piece Symphonie Fantastique composed by Hector Berlioz. A level of intensity in this part is on a second level.



**Figure 10** The full idée-fixe notation for saxophone in SaxoVerse part 7

Part Eight, approximately time 7.31" - 9.00", is an improvisation part where the level of intensity gradually increases from 3 to 7, the Saxophonists chooses a notes D Db C B Bb, which are in a low pitch range in saxophone to improvise by using these notes to create a short motif. After that, the motif will be recorded by an electric instrument player. Then, the motif is developed by being played as a loop. Once the saxophonist hears the loop from an electric instrument player, the saxophonists continue playing the same melody and slightly increase pitch and intensity.

Part Nine, approximately time 9.01" - 9.30", is a continuous playing form Part Eight. The level of intensity in Part Nine is increased from level 7 to 10. In the beginning, approximately the first 10 seconds, the only saxophonist has played by creating a fast and large number of notes, followed by a part that is the most chaotic part of the piece which roaring, high pitch, Glissando can be used without caring about which notes will be played but focusing only on creating a most stressful emotion.

Part Ten, approximately time 9.30" - 10.00", the Saxophonists stop playing, only a sound from electronic instrument remains. At the end of the piece, the saxophonists play a Multiphonics technic at level 5 intensity.

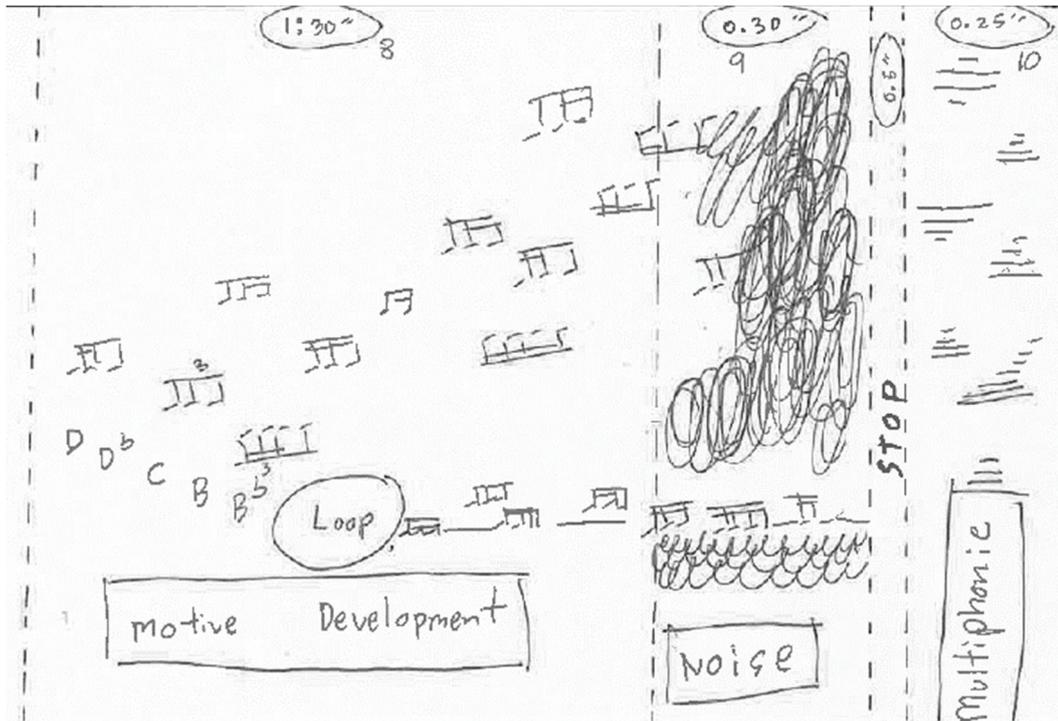


Figure 11 Graphic notation for Saxophones in SaxoVerse part 8-10 by Teerus Laohverapanich

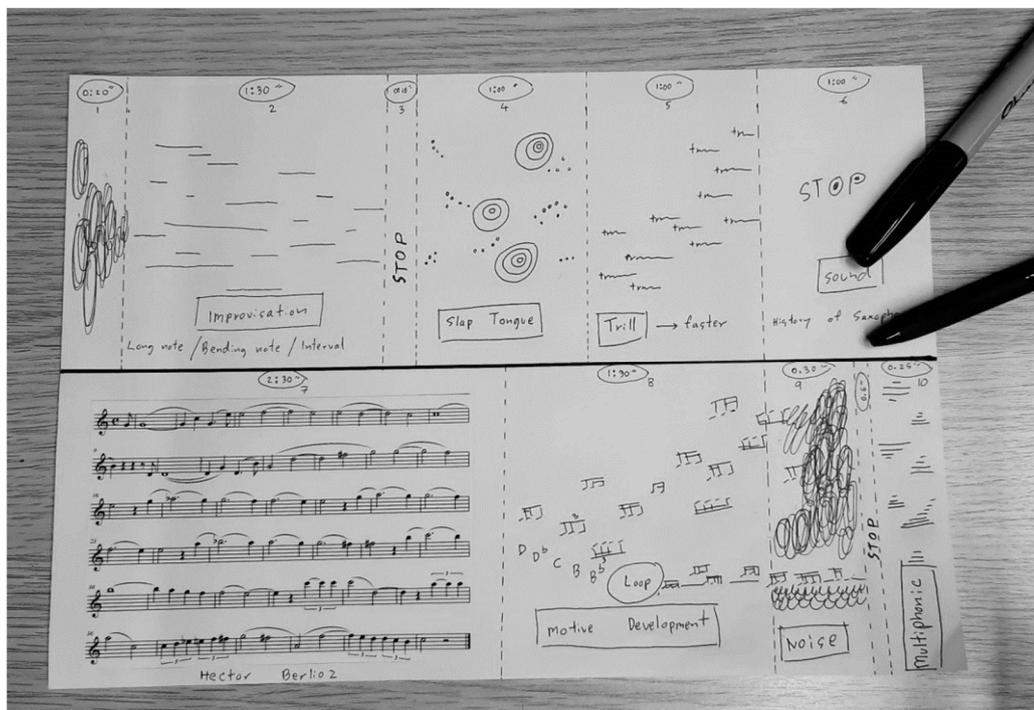


Figure 12 The graphic notation for saxophone in SaxoVerse by Teerus Laohverapanich



## 5. Conclusion

The SaxoVerse for alto saxophone, piano, and the computer was performed in the electronic music festival “Loop” in August 2019 at the conservatory of music, Rangsit University, by Boonrut Sirirattanapan, Teerus Laohverapanich, and Mahakit Mahaneeranont. The performance was recorded and filmed again in the same month and broadcast on youtube.com via link address <https://youtu.be/eRlI5oOkqj8>.

This composition mixes three groups of sound to represent different styles or “multi-universe” of music at the same time. It is an attempt to communicate the prophecy “verse” by Hector Berlioz from the article he written about the saxophone almost 200 years ago that the saxophone will be one of the most popular wind instruments in the global scale. By using different instrumental techniques and the power of the computer as an electronic music instrument, the composer had created a new work that combined text reciting, jazz improvisation, avant-garde style, and electronic sound.

## 6. Acknowledgement

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